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Eight weeks in Lobo Bay. The Natuurkundige Commissie on New Guinea in 1828. II. Serpentes (Colubridae, Elapidae, Typhlopidae) and Sauria (Agamidae, Dibamidae, Gekkonidae, Varanidae)

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Abstract: The second group of the Dutch Natuurkundige Commissie spent nearly twelve years in the Dutch East Indies. Most of the scientists died during the expedition, with only Salomon Müller returning to the Netherlands with the collections. The progressive loss of the senior scientists, Boie and Macklot, resulted in Müller moving up the ranks of seniority and taking progressively greater responsibility for the collection and documentation of the zoological collections. The recent release online of the archival manuscript material from this expedition has allowed a better understanding of the extent of their collections. In this second part of our study of the archival material relating to the expedition's voyage to New Guinea in 1828, we document and translate the material relating to the eleven species of snakes and non-scincid lizards: *Psamophis chlorogastra* Müll. and *Elaps oculiferus* Müll., *Dendrophis capistratus* Müll., *Dipsas lacrÿmans* Müll., *Tropidonotus picturatus* Müll., *Acontias polygrammicus* Müll., *Acontias coecus* Cuvier, *Calotes megapogon* Müll., *Hemidactylus baliatus* Müll., *Gonyodactylus Boiei* Müll., and *Varanus prasinus* Mull., as Müller chose to call them. We place these descriptions and images in the context of the state of knowledge of the reptile fauna at the time of the Natuurkundige Commissie, as well as the contributions they made to progressing knowledge of the region's herpetofauna, often involving formal publication of new taxa by Hermann Schlegel in Leiden and Duméril and Bibron in Paris, among others.

Key words: Natuurkundige Commissie, Dutch East Indies, New Guinea, Lobo, Hermann Schlegel, Salomon Müller, Pieter van Oort, Naturalis (Leiden), *Psamophis, Elaps, Dendrophis, Dipsas, Tropidonotus, Acontias, Calotes, Varanus, Hemidactylus, Gonyodactylus, Aspidomorphus*, *Boiga*, *Dendrelaphis*, *Tropidonophis*, *Ramphotyphlops*, *Dibamus*, *Hypsilurus*, *Gehyra*, *Cyrtodactylus*

Introduction

The Dutch Natuurkundige Commissie spent many years in what was then known as the Dutch East Indies, collecting specimens and making natural history observations on the fauna of the region. Although the first group of the Natuurkundige Commissie, led by Heinrich Kuhl and Johan Coenrad van Hasselt, had been extremely successful in its collections and scientific study of the fauna of Java, recognition of that success was delayed due to the premature deaths of the two. This tragic end to the first expedition made it necessary to bring together and send a second group.

The second expedition, initially led by Heinrich Boie and operating between December 1825 and August 1837, was similarly to take a tragically high toll on its members. Only Salomon Müller would return to the Netherlands. Heinrich Boie, Gerrit van Raalten, Heinrich Macklot, Pieter van Oort, Alexander Zippelius and Ludwig Horner, not to mention many of the unnamed people in their support team and the Dutch soldiers they worked with, died in the East Indies. Müller reported "meer dan twintig dooden" (more than twenty dead) within three months in the military "Fort du Bus" in Lobo Bay. He noted that their ship, the *Triton*, returned to Amboina (Ambon) from their survey of New Guinea in early September with "meer dan zestig zieken" (more than sixty sick) on board (Müller 1840–41:10).

Müller's published output was more limited than would be expected from the amount of work he accomplished during the nearly 12-year duration of the second Commissie, as well as being custodian of the writings of the other expedition members. Only the volumes "*Land- en Volkenkunde*" written by Müller, and "*Zoologie*", mostly written in coauthorship with Hermann Schlegel, curator at the Rijksmuseum van Natuurlijke Historie in Leiden, appeared under his name, part of the three-volume "*Verhandelingen*" (1839–1844 [–47]), essentially the activity report on the expeditions of the Natuurkundige Commissie.[1] However, all were written in Dutch, which hampered their distribution and recognition outside of the Dutch-speaking world.

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Müller's unpublished oeuvre, on the other hand, was much more extensive, and has recently made available online (Gassó et al. 2020). These journals and notes comprise more than 2,300 handwritten pages, of which barely 200 pages (folder NNM001001113) are dedicated to amphibians and reptiles. However, his handwritten notes are not only voluminous, but difficult to decipher, and a comprehensive account of the whole enterprise must be left to future work.

Instead, we confine ourselves to presentation and analysis of the herpetological collections made and described by Müller during the short period that the Commissie spent in New Guinea. This visit to New Guinea resulted in the first major land-based faunal collection from the New Guinea mainland.

Just over eight weeks (from 5 July to 29 August 1828) were spent on New Guinea near Lobo Bay, which, despite this short duration, turned out to be immensely successful scientifically. In this brief period, the natural scientists succeeded in obtaining "119 Vogelsoorten (…), die tot 60 geschlachten behoorden" and of amphibiens "36 soorten waarvan 15 hagedisachtigen, 15 slangen, één schildpadachtige en vijf kikvorsachtigen" (Mörzer Bruyns 2018:98–99; 119 bird species belonging to 60 genera; and 36 species of amphibians of which are 15 lizard-like, 15 snakes, one turtle-like, and five frog-like species).

Given that other records from this period, such as Macklot's notes and the relevant parts of van Oort's diaries, have been lost, Müller's notes are the only remaining records of the initial discovery and descriptions of the many previously unknown species the expedition found in New Guinea. These descriptions, however, are almost exclusively limited to zoological and taxonomic subjects. Apart from the indigenous naming of certain species, comprehensive insights into the scientific cooperation within the group, for instance, are scarce. Müller published his general observations on the region in the first chapter, about 80 pages long, "Bijdragen tot de kennis van Nieuw-Guinea" (Contributions to the knowledge of New Guinea; Müller 1840–41) in the "*Land- en Volkenkunde*" volume of Temminck's "*Verhandelingen*", including information about the geography of New Guinea, its waterways, climatic conditions, as well as ethnology such as religious customs, descriptions of hamlets, arms, tools, clothes and ornaments, the attitude of the indigenous people towards foreigners, their customs and traditions, and finally a dictionary, of more than 120 words and numerals, in five regional languages. Unfortunately, he never describes the structure or collaboration within the Commissie. There are no hints on how the scientists collaborated or what instructions were provided to taxidermists and artists for their respective tasks. Similarly, details of daily life remain elusive. What was life like in the newly built fort, named "Fort du Bus" in honour of the General Commissioner Leonard du Bus de Gisignies? We know the scientists had to help construct the buildings and surrounding protective palisade, but we know nothing about the living conditions or food gathering during that period. It can be assumed that the scientists had to contribute as hunters to sustain the fort. Under such conditions, the scientific achievements are remarkable.

In the first part of this project (Jacobs and Shea 2022), we discussed eleven species of skinks reported by Müller: *Scincus typhlocephalus, S. oxycephalus* and *S. tressianus, S. erytholaimus, S. biorchus, S. chalconotus, S. rabdognathus*, *S. pleurorabdus, S. maculosus* and *S. gracilis*, plus *Centroplites nigricans*. In this second part of our research into the Natuurkundige Commissie's activities in New Guinea, we focus on ten additional species of reptiles that Salomon Müller collected near Lobo Bay and on the Utanata River prior to arrival at Lobo Bay: *Psamophis chlorogastra* Müll. (= *Aspidomorphus schlegelii* Günther 1872), *Elaps oculiferus* Müll. (= *Aspidomorphus muelleri* Schlegel 1837a), *Dendrophis capistratus* Müll. (= *Dendrelaphis calligastra* (Günther 1867) or possibly *D. lorentzii* (Lidth de Jeude 1911)), *Dipsas lacrÿmans* Müll. (= *Boiga irregularis* (Bechstein 1802)), *Tropidonotus picturatus* Müll. (= *Tropidonophis picturatus* (Schlegel 1837a)), *Acontias polygrammicus* Müll. (= *Ramphotyphlops multilineatus* (Schlegel 1839a)), *Acontias coecus* Cuvier (= *Dibamus novaeguineae* Duméril and Bibron 1839), *Calotes megapogon* Müll. (= *Hypsilurus megapogon* (Duméril and Bibron 1837)), *Hemidactylus baliatus* Müll. (= *Gehyra serraticauda* Skipwith and Oliver 2014), and *Gonyodactylus Boiei* Müll. (= *Cyrtodactylus novaeguineae* (Schlegel 1844)) as Müller chose to call them. A final reptile, the varanid lizard *Varanus prasinus* Schlegel 1839b, was discussed extensively by Jacobs and Koch (2021) and is only briefly dealt with here for the sake of completeness.[2]

We focus on species that Müller described in detail, nine of which he evidently intended to publish in his name as indicated by the addition of his acronym to the names he assigned to them. *Acontias coecus*, which he attributed to Cuvier, is the only exception. Each of Müller's descriptions is accompanied by a drawing by Pieter van Oort, except those of *Acontias coecus* and *Gonodactylus Boiei*. The illustrations, like the notes, were obviously prepared on site.

Of course, the presentation of such texts cannot take place without embedding them in the context of the history of science. This contextualisation is unavoidable if one wants to understand their qualities. Müller's extraordinary achievements in particular must be judged against the background of his origins as the son of a pub owner and his relatively limited school education, ultimately without a university foundation (Jacobs 2022). Originally employed as a taxidermist, he developed into an outstanding naturalist in a team with the scientists Heinrich Boie and Heinrich Macklot.

Just as Kuhl and van Hasselt in the first expedition had visited the leading museums and scientists in Central Europe to prepare for their expedition, Boie, the original leader of the second Commissie, accompanied by Coenraad Jacob Temminck, the first director of the newly founded Rijksmuseum in Leiden, also visited the Natural History Museum in Paris for four months (Susanna 1834:37–38).

There they met Alexander von Humboldt and Georges Cuvier. Even though Müller did not take part in this trip himself due to his role as a taxidermist, the knowledge gained there by his senior colleagues undoubtedly had a major influence on him through his interactions with them. In addition, the large number of books available to the scientists provided an extensive source of existing knowledge that was incorporated into the writing of the diverse notes created by Müller. In van Hasselt's bequest alone (Gassó et al. 2020:NNM001001213) are listed 130 titles of an impressive, specialised library which was quite up to date, including works by Daudin, Cuvier, Linné, Lamarck and Russell, to name but a few. In addition, there were titles by Kuhl, Tiedemann, Temminck and others from their immediate environment, together providing a thorough basis for scientific work. The often months-long waiting times during the expedition, for example at the Cape of Good Hope en route to the East Indies, were obviously used for joint study, from which Müller benefited immensely.

However, as we know from a letter from Boie to Wagler (H. Boie 1827:724), the largest fund for their scientific work was bequeathed to them through the considerable collection and the detailed notes and drawings of the first group. From these and his studies of other collections, Boie had prepared an extensive herpetological manuscript, the "*Erpétologie de l'île de Java*". Boie had initially prepared this work for eventual inclusion in the work on the Natuurkundige Commissie's activities. However, due to Boie's death, the publication of this legendary work was first delayed and later abandoned.[3]

In presenting Müller's notes, we frame these in light of the source material for his descriptions.

A second major focus of our work considers the contemporary impact of Müller's collections and writings: what significance did both the scientific work and the drawings of the often-unknown species attain?

On Müller's return to Leiden, his collections and notes, along with the artworks created by the artist Pieter van Oort, were passed on to Hermann Schlegel, Boie's replacement as Curator at the museum, for study. Schlegel extensively incorporated Müller's notes, and had van Oort's illustrations engraved, often with modification, for publication in his two major herpetological works, his "*Abbildungen*" (1837–44) and "*Essai*" (1837), yet he often did not use Müller's names for the species, obscuring many of Müller's contributions. By comparing Müller's original manuscripts with Schlegel's published writings, we are able to demonstrate how extensively Müller's work influenced Schlegel.

Another sphere of influence includes naturalists who, like Boie and Temminck in their earlier visit to Paris, travelled to Leiden to study the latest exhibits. This also resulted in many descriptions of new taxa. Conversely, many specimens were sent to other institutions and universities in exchange for material from other parts of the world. In the Museum National d'Histoire in Paris, for example, there is evidence of many specimens collected by the Natuurkundige Commissie. This exchange was in part due to a visit by Schlegel to Paris between April and July 1835 (Kaiser et al. 2021:59) and his interactions with Duméril and Bibron, which led to a considerable number of descriptions by the two French scientists.

Taken together, the two parts of our study represent only a portion of what the members of the Commissie achieved in the Lobo Bay region and covers only a small part of the totality of Müller's handwritten notes.

ELAPIDAE

Psamophis chlorogastra Müll., *Elaps Muelleri* Schlegel (in part) (= *Aspidomorphus schlegelii* Günther 1872)

This is the first snake species description from Lobo Bay reproduced in the digital archive (Gassó et al. 2020), though not the first species collected by the Commissie in New Guinea. As noted by Jacobs and Shea (2022), the compiled distributions and images in the digital archive are not reproduced in chronological or taxonomic order.

Within the two decades following Müller's description, for the species listed in the undated "Catalog der auf Neu-Guinea erhaltenen Reptilien" (NNM001001423_001; Catalog of reptiles obtained from New Guinea) as "*Psamophis* [sic!] *chlorogastra*", Schlegel provided two descriptions. The first (Schlegel 1837a) was published the same year Müller returned to Leiden and was named in his honour as *Elaps Muelleri*. The second description was published eight years later in collaboration with Müller (Schlegel and Müller 1845 part 4:66–68) in the 12th instalment of the "*Zoologie*" volume of Temminck's *Verhandelingen* (Temminck 1839–1844 [–47])

Schlegel (1837a part 2:453)[4] based his first description on "deux individus très différens l'un de l'autre" (two individuals very different from each other), which were obtained by Müller on the west coast of New Guinea "et dont feu van Oort a tracé les portraits d'après le vivant" (and whose portraits were drawn from life by the late van Oort).

Indeed, the two specimens exhibit notable differences. Schlegel points out differences in their pattern and colouration as well as squamation. The ventral counts he gives for the two specimens, 176 + 32 (ventrals + subcaudals) and 148 + 24, are strikingly similar to the numbers recorded in Müller's "Catalog" (NNM001001423_001): 171 + 33 and 145 + 25, respectively. Schlegel gives measurements for the two specimens as 0.45 + 0.06 and 0.36 + 0.045, referring to snout-vent length and tail length.

In the second description, Schlegel and Müller (1845) refer to three specimens: the two original specimens collected by Müller and another, not shown on the plate, collected on the island Rawak (near Waigeo). This specimen was obtained by Jean René Constant Quoy and Joseph Paul Gaimard during the *Uranie* expedition, which visited Rawak and nearby islands between16 December 1818 and 6 January

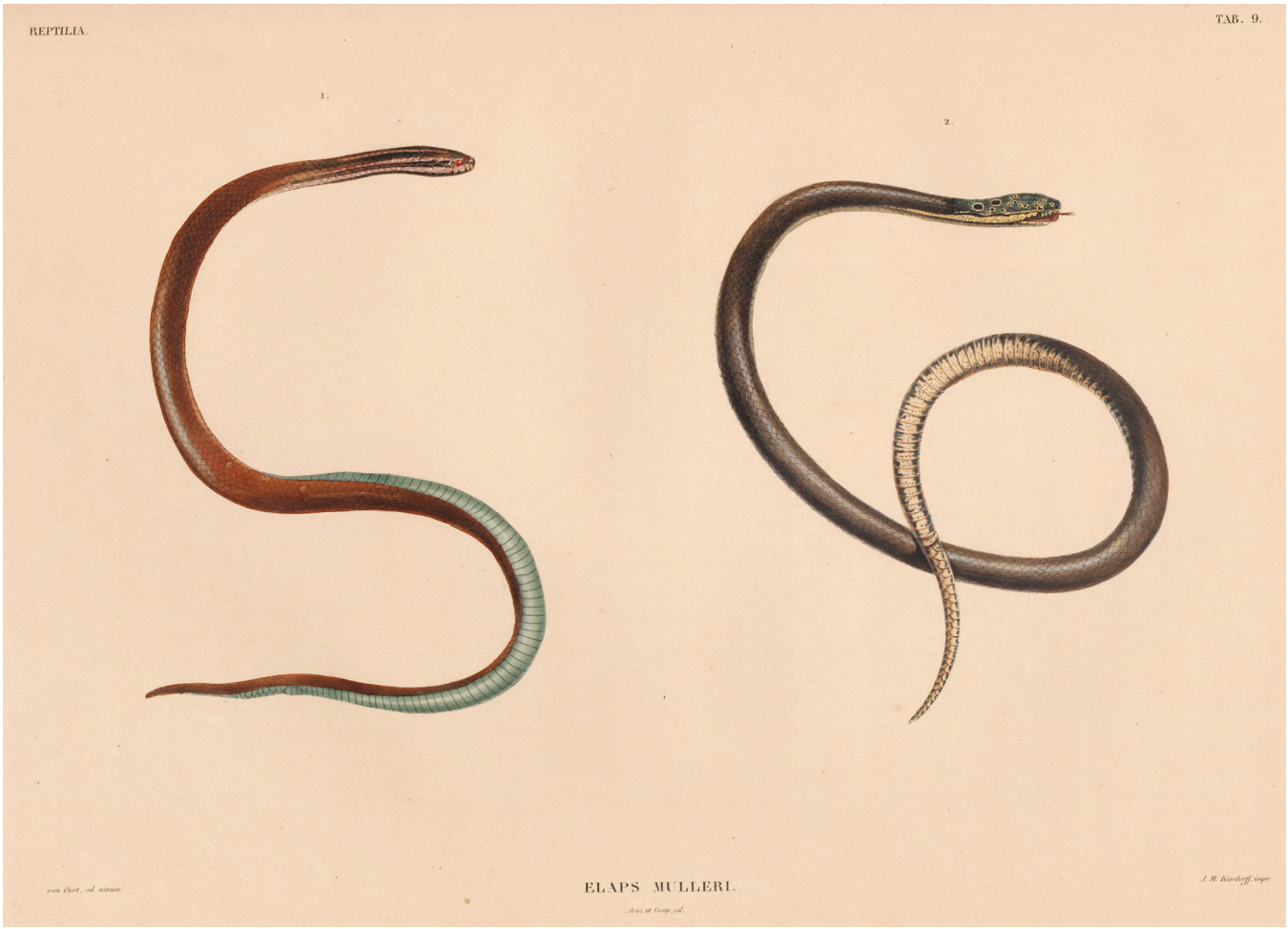

Fig. 1. *Psammophis chlorogastra*/*Elaps Muelleri* (Schlegel and Müller 1845: Tab. 9, drawn by Pieter van Oort "ad vivum", engraved by J. M. Kierdorff). Schlegel pictured the two specimens on one page, as he considered both to belong to the same species, while they were originally drawn by van Oort as separate taxa. On the left is *Psammophis chlorogastra* of Müller now *Aspidomorphus schlegelii* (see as well: NNM001000630 and Fig. 2 below) and on the right *Elaps oculiferus* of Müller (see as well: NNM001000626 and Fig. 4 below), today's *A. muelleri*.

The prints in Schlegel's work were created in black and white (see NNM001000873_043), and each copy had to be coloured individually. In the final printed plate, the animals depicted often appear as mirror images of the original. The engraver transferred the original drawing directly onto the stone, causing the inversion during the printing process.

1819 (Freycinet 1829). The Rawak specimen measured 400 + 35mm with ventral scale counts of 166 + 36. The location for this specimen was given as "de eilanden Rawak en Waigiou" (Schlegel and Müller 1845 part 4:67; the islands Rawak and Waigeo).

Schlegel (1837a) mentions the specimens in his possession have lost their beautiful colours due to preservation, indicating his description of colour was based on van Oort's drawings. Duméril et al. (1854:1234) list the measurements as 455 mm + 60 mm and 440 mm + 35 mm and scale counts of 176 + 42, 166 + 36 and 148 + 24. Although they mention only having two specimens in their own collection, the similarity to the three values provided by Schlegel and Müller (1845) suggests that they repeated the values from Schlegel's accounts instead of examining their own two specimens, although transcription errors are plausible.

The second specimen on Schlegel and Müller's plate (Fig. 1) is likely to be the one listed in Müller's "Catalog" right underneath *P. chlorogastra* as "*Elaps oculiferus* Müll", a name later changed to "mulleri" (NNM001001423_001), probably by Schlegel.

Schlegel's differentiating description of the two specimens calls for a comparison with the drawings: "Le premier individu a la lèvre supérieure ornée d'une raie couleur de rose, qui se prolonge sur les côtés du cou" (Schlegel 1837a part 2:453, The first individual has a rose-coloured stripe on the upper lip, extending down the sides of the neck). This clearly corresponds with the left one of the two specimens (Fig. 1). A closer look reveals that Fig. 2, van Oort's original, represents the same specimen, although the posture is different. As already explained the mirror-image reproduction is a consequence of the fact that the engraver of Fig. 1 retained the orientation of the drawing, so that the

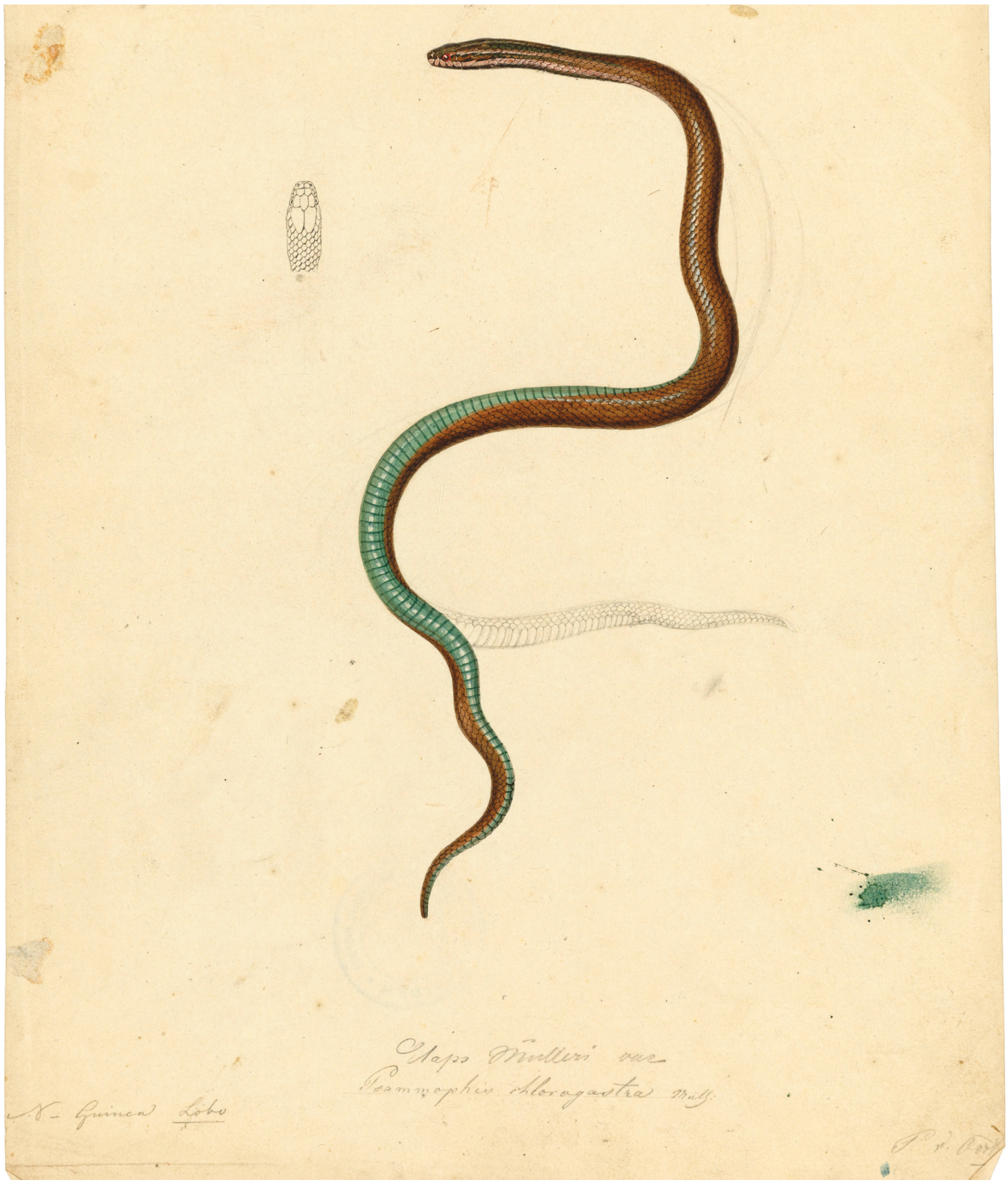

Fig. 2. The image of the snake as a whole "*Psammophis chlorogastra* Müll:" (NNM001000630) was flanked by precise head and tail scalation studies. The colour of the belly obviously evoked the epithet: "chlorogastra", green-bellied.

Written above the original name, in Müller's own handwriting is "*Elaps mülleri var*". In the lower lefthand corner: "N. Guinea Lobo"; in the right corner: "P. van Oort". The shadowy (only slightly indicated) suggestion of an originally intended posture emphasises the character of the drawing, which was created on site. The engraver for the published version in Schlegel's "*Essai*" (1837a) obviously preferred the alternative posture here only indicated in the outer contours and the scales.

printed image was reversed. In addition, the upper body as well as the abdomen/tail are differently positioned in the printed image, although this was already indicated as an alternative placement in pencil on the original drawing.

Schlegel's description of the other individual—on the right side of Schlegel's compilation (Fig. 1, see as well Fig. 3)—is somewhat sparse, pointing to the head "qui offre en outre une tête d'un vert foncé et parsemé de nombreuses taches rondes ou ovales, noires et bordées de jaune" (Schlegel 1837a part 2:453, it also has a dark green head with numerous round or oval black spots with yellow borders).

These differences raise questions about why Schlegel evidently overruled Müller and subsumed the individuals Müller assigned as two species into only one taxon, but he may have been persuaded by their similarity in other aspects. This is reminiscent of Schlegel's complaint that the skinks were taxonomically too finely divided (Jacobs and Shea 2022) describing only two of the many species Müller had collected and named. The head studies of van Oort (Figs. 2 and 3) which Schlegel omitted in his combination (Fig. 1) indeed show a rather similar scalation: we see two internasals and prefrontals, a row of three scales representing the two supraoculars and a median frontal, and two large parietals in both studies.

In the undated transport-list of reptiles from New Guinea, the "Catalog", only one specimen of *Psammophis chlorogastra* (NNM001001423_001) appears, which was crossed out subsequently without any name given as substitute. Immediately underneath in the same list is a specimen of *Elaps oculiferus* Müll, which was subsequently corrected in pencil to "muelleri". One specimen "*Elaps* (?) *oculiferus* Müll" is recorded in the later "Catalogus" list of February 1831 (NNM001001436_004). Since both lists are in Müller's hand, he obviously assigned the two specimens to different genera.

Psammophis, a generic name first published by Fitzinger (1826), and meaning "sand-snake" in reference to the habitat of the snake, originally described a species from Africa, *Coluber sibilans* Linnaeus (1758). Fitzinger's book appeared just after the Commissie left Europe. However, as reported by Schlegel (1826, 1827), Fitzinger was known to have used, without specific attribution, some of the unpublished names from Boie's "*Erpétologie de Java*", with Schlegel (1826, 1827) and Heinrich Boie's brother Friedrich (F. Boie 1826, 1827) crediting Heinrich as the author of the name.[5] Hence, it is likely that Müller would have obtained the name from Boie, either directly or through the manuscript and/or plates of the "*Erpétologie de Java*" after Boie's death. According to Schlegel (1826, 1827) Heinrich's original concept of *Psammophis* included five species, one of which, *Psammophis pulverulenta* (attributed by Schlegel to Kuhl and van Hasselt but by Friedrich Boie (1827) to Heinrich's monograph), now *Psammodynastes pulverulentus*, is widespread in Indonesia, hence negating the seeming geographic discontinuity between Müller's New Guinea species and Fitzinger's original type species for the genus.

Elaps, created by Schneider (1801)—possibly from the Latin *elabor*, to slip away (Schneider did not provide an etymology for his new generic name)—the basis for the family Elapidae, are characterised by permanently erect fangs at the front of the mouth, and Elapidae is the family to which both of Müller's species are now assigned. Schneider's original *Elaps* included a variety of species now placed in five different families, while Fitzinger's *Elaps* was largely based on the American coral snakes (now *Micrurus*) but did include one Indonesian species—*Elaps furcatus* Schneider 1801, now *Calliophis intestinalis* (Laurenti 1768). Boie's concept of *Elaps*, as presented by Schlegel (1826, 1827), included nine species, with three from Asia.

Eight years later, the redescription of *Elaps muelleri* by Schlegel and Müller (1845), noted the same differences in colour without any interpretation that this might suggest more than one species. Linguistically, this later description of the species suggests that it was written by Müller alone, since Schlegel was not member of the expedition—they write how "wij" detected this "nieuwe soort, door ons alleen op Nieuw-Guinea waargenomen, (…) in de maand augustus 1828" (Schlegel and Müller 1845, part 4:67, we detected this new species, observed by us only on New Guinea, (...) in the month of August 1828), suggesting Müller had by then accepted Schlegel's identification of the specimens as representing a single species.

Returning to the first published description by Schlegel (1837a), the distinguishing characteristics from other species of *Elaps* refer mostly to the head, which is "peu distincte du cou, alongée, étroite, déprimée, à museau assez court, conique et un peu concave", "les yeux sont plus gros que d'ordinaire", "huit labiales", "15 rangées d'écaillés en rhombe" and finally "la queue est courte et conique" (Schlegel 1837a part 2:453–454; not very distinct from the neck, elongated, narrow, depressed, with a fairly short, conical and slightly concave muzzle; the somewhat bigger eyes; eight labials; 15 rows of rhombic scales). These criteria can be easily discovered in Müller's handwritten notes (below).

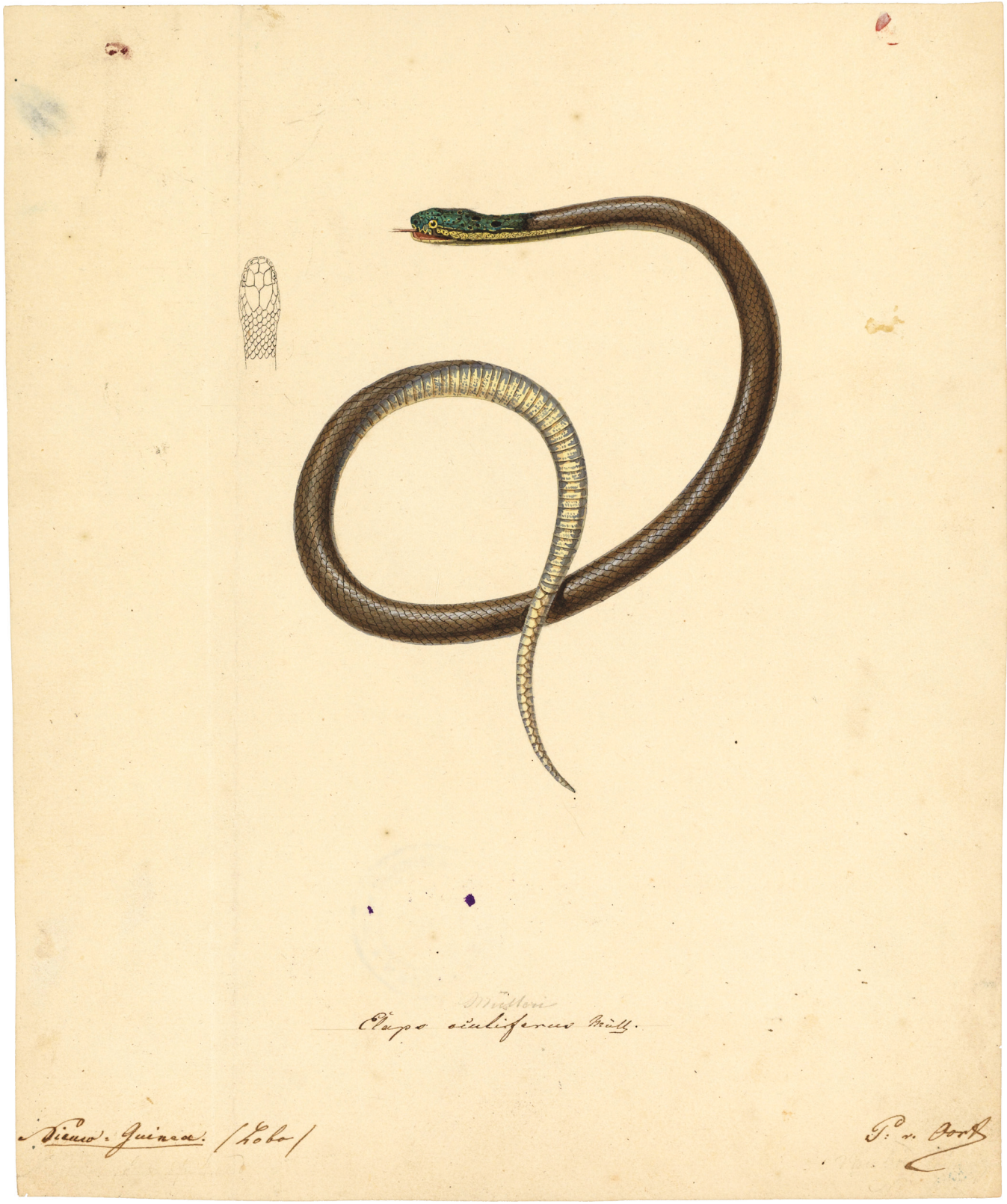

Fig. 3. "*Elaps oculiferus* Müll" (NNM001000626), with "Mülleri" written above the name in pencil. In the lower left corner Müller notes the origin: "Nieuw=Guinea (Lobo).", while in the right corner the name of the draughtsman is recorded: "P: v. Oort".

Müller's manuscript in transcription and English translation

(Gassó et al. 2020: NNM001001113_068) (Fig. 4)

Psamophis [= *Psammophis*, in error] *chlorogastra Müll.*[6] [crossed out] *Elaps Mulleri* Schlegel [above the line, by Müller himself]

Neu=Guinea (Lobo)
August 1828

146 + 25.
Gz. Lg. [= ganze Länge] *mit Schz.* [= Schwanz] *1′ 3″ 3 ½‴*[7] [= 415 mm], *Schz.* [= Schwanz] *1″ 6‴* [= 41 mm]*; Kopf lang 7‴* [= 16 mm], *hinten breit 3 ½‴* [= 8 mm], *hoch über der Stirn 2 ½‴* [= 6 mm]. —
Kopf kaum unterschieden, ringförmig platt gedrückt; Wirbelschild länglich, vorne dreyeckig, hinten mit abgerundeten Seiten, stumpfspitzig; Hinterhauptschild unregelmäßig, fünfseitig; 2 Stirn- u. 2 Schnauzschilde, Nasenlöcher klein, rundlich [above the line], *etwas schräg nach hinten gerichtet. Rumpf gleich dick; Schz.* [= Schwanz] *stätig, kurz mit stumpfer Spitze; Schuppen rautenförmig, sechseckig, glatt. — Ganze obere Seite des Körpers* [crossed out] *Kastanien braun; Oberlippen mit der Seite des Kopfes u. Halses leicht weinröthlich, sehr fein schwarz punktirt; von den Nasenlöchern durch die Augen ganz 1“* [= 27 mm] *den Hals herab zieht sich ein gerader ungefähr* [above the line] [crossed out] x [unreadable] *,“ breiter kastanienbrauner Längsstreif.* [crossed out] *alle unteren Theile des Körpers schmutzig spangrün, an den Seiten der Schilder fein schwarz getüpfelt. —*

146 + 25.
Whole length with tail 415 mm, tail 41 mm; head length 16 mm, breadth behind 8 mm, height above the forehead 6 mm. —
Head scarcely distinguished ring-shaped, depressed; frontal[8] elongate, anteriorly triangular posteriorly with rounded sides, bluntly pointed; parietals irregular, pentagonal; 2 prefrontals and 2 internasals, nostrils small, roundish, directed somewhat obliquely posteriorly. Torso equally thick; tail steady, short with blunt tip; scales diamond-shaped, hexagonal, smooth. — Entire upper side of body chestnut brown; upper lips with the side of the head and neck slightly wine-reddish, very finely dotted with black; from the nostrils through the eyes approximately 27 mm and down the neck there is a straight, approximately [unreadable] ‘” wide maroon longitudinal stripe. All lower parts of the body dirty dull green, finely dotted with black on the sides of the shields. —

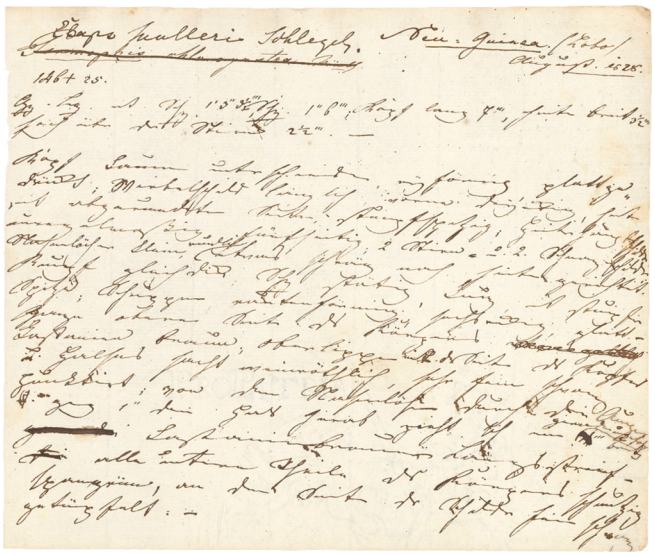

Fig. 4. Facsimile of Müller's unpublished description of *Psamophis chlorogastra* Müll. (NNM001001113_068).

While Muller, writing at the time the expedition was in the field, uses the spelling Lobo for the locality, Schlegel and Müller (1845 part 4:68) later use the spelling Langoeroe Bay. This was possibly more akin to the indigenous pronunciation of the locality; today's Triton Bay honours the corvette *Triton* used for this expedition.

Elaps oculiferus Müll. (= *Aspidomorphus muelleri* (Schlegel 1837a))

The second specimen on Fig. 1, considered by Schlegel to be synonymous with *P. chlorogastra* and therefore placed on one sheet by Schlegel and Müller (1845), was identified as a different species by Müller. A comparison of Müller's notes on the two taxa points to the snout: while the head of *P. chlorogastra* is rather roundish, slightly depressed and barely separated from the body, the head of *E. oculiferus* is bluntly truncated, aspects which are reflected in the illustrations (Fig. 2, 3) as well. Müller emphasises that the frontals are anteriorly triangular in the first species and almost cut off in the second but triangular posteriorly.

In the first species, from the nostrils through the eye there is a chestnut-brown longitudinal stripe, which changes to a general brown further along the body. In contrast, the second species has a yellow stripe on the side of the neck from about the level of the eye, which narrows and disappears about 4 cm behind the head, with prominent eye-like spots on the neck. Müller also seems to have based his chosen epithets on this latter feature: “oculiferus”, deriving from the Latin “*oculus*” and “*fero*”, meaning bearing eyes, referring to the spots on the nape “unter welchen sich besonders 3 größere Augenflecken auszeichnen” (see Müller's description below; among which three larger eye-spots are particularly prominent) forming a triangle.

According to Müller, this species generally has a "dunkel bleÿfarben bräunlichen Rücken" (dark leaden brownish back), which becomes darker on the tail. The ventral side is "blaß grünlich gelb" [pale greenish yellow] and the throat "lividschwärzlich" [bluish-back]. However, a "breiterer citronengelber Streif" [broader lemon yellow stripe] is particularly emphasised, which he mentions together with Schlegel later as a "bleek citroengele, fijn zwart gezoomde streep" (Schlegel and Müller 1845 part 4:68; pale lemon yellow, fine black laced stripe), which stands out clearly in the drawing.

Müller's manuscript in transcription and English translation

(Gassó et al. 2020: NNM001001113_069)

Elaps p. oculiferus [epitheton crossed out, first abbreviated epitheton unreadable][9] *Neu=Guinea (Lobo)*
Mulleri Schlegel [over the line by Müller's own hand] *August 1828*

174 + 33.
Ganze Länge mit Schz. [= Schwanz] *1′ 7″* [= 433 mm]*; Schz.* [= Schwanz] *2″ 2 ½‴* [= 60 mm]*, Kopf lang 7 ½‴* [= 16 mm] *hinten breit 4 ¾‴* [= 11 mm] *hoch über der Stirn 3‴* [= 7 mm]. — *Körper rundlich, Kopf länglich, fast gleich breit; Schnauze stumpf abgeschnitten; Augen 1‴* [= 2.4 mm] *groß; Nasenlöcher klein, rundlich; Wirbelschild länglich vorne beÿnahe recht* [unreadable] *abgeschnitten, hinten spitz dreÿeckig; 2 Stirn und 2 Schnauzenschilder von gewöhnlicher Form; Rüßelschild klein, unten mit einem herzförmigen Eindruck, oben abgerundet, kaum auf die Haube vortrethend; 2 Hinterhauptschilde, die längliche Seite mit stumpfer Spitze; auf jeder Seite oben und unten 7 Randschilder; u. 4 längliche schmale Rinnenschilder; darunter 4 Reihen Kehlschuppen. Schuppen klein, länglich mit stumpfer Spitze, u. ganz glatt. Scheitel u. Nacken schön dunkelgrün mit vielen schwarzen hellen eingefaßten Punkten, unter welchen* [crossed out] *sich besonders 3 größere Augenflecken auszeichnen* [over the line] *die eine Triangel bilden* [crossed out] *im Nackenstreifen; eine schwarze Linie zieht sich vom hinteren Augenwinkel längst der Seite des Nackens, gegen 10‴* [= 24 mm] *lang herab,* [over the line] *wo* [crossed out] *alsdann beÿde durch einen nicht sehr deutlichen, gekrümmten, dunklen Querstreif vereinigt werden; u. so den helleren Nacken von dem dunkel bleÿfarben bräunlichen Rücken schniedet* [in error: "scheidet"]*; unter dieser schwarzen Linie, längst der Seite des* [crossed out] *Halses zieht sich ein breiterer citronengelber Streif, längst dem Rande des Kehlschildes, gegen 16‴* [= 36 mm] *abwärts, wo er fein ausläuft; dieser Streif so wie mehrere gleichgefärbte (gelbliche) Flecken auf den vordersten oberen Randschildern ist fein schwarz* [crossed out] *punktiert;* [crossed out] *untere Hälfte der 2 hintersten Randschilder einfarbig schwarz; Randschilder der Unterlippen oben gelb gesäumt; Kinn u. Kehle lividschwärzlich* [livid = blueish]*; Bauch u. untere Seite des Schzs.* [= Schwanzes] *blaß grünlichgelb; dicht mit bleÿfarben Pünktchen u. Strichelchen besetzt, die an den Rändern des Schildes so dicht gedrängt stehen,*
_070 [10]
daß solche daselbst fast ganz in diese Farben übergehen; auf dem unteren Theil des Schzs. [= Schwanzes] *stehen die dunklen Pünktchen etwas spärlicher als auf dem Bauch, besonders der obere Theil desselben, u. auch die obere Seite des Schzs.* [= Schwanzes] *ist bräunlicher als der Rücken. — Nur ein Individuum. —*

174 + 33.
Entire length with tail 433 mm; tail 60 mm, head length 16 mm width at the back 11 mm height above forehead 7 mm. —

Body roundish, head elongate, almost equally broad; snout bluntly truncate; eyes 2.4 mm large; nostrils small, roundish; frontal shield elongate anteriorly nearly truncated, posteriorly acutely triangular; 2 prefrontal and 2 internasal shields of ordinary shape; rostral shield small, at the bottom with a heart-shaped impression, rounded on top, barely protruding on the hood; 2 parietal shields, the elongated side with blunt tip; on each side above and below 7 labial scales; 4 elongated narrow gular scales; below 4 rows of throat scales. Scales small, elongated with blunt tip, and quite smooth.
Crown and nape beautifully dark green with many black light bordered dots, among which 3 larger eye-spots are particularly prominent forming a triangle in the nape stripe; a black line descends from the rear eye-corner along the side of the neck, approximately 24 mm long, where then both are combined in a not very distinct, curved, dark transverse stripe; thus separating the lighter neck from this dark lead-coloured brownish back; below this black line, along the side of the neck, a broader lemon yellow stripe runs along the edge of the throat shield approximately 36 mm downwards, where it tapers off finely; this stripe, as well as several (yellowish) spots of the same colour on the foremost upper labial shields, is finely dotted with black; the lower half of the 2 rearmost labial shields is unicoloured black; the labial shields of the lower lips are fringed with yellow at the top. The chin and throat are livid blackish; the belly and lower side of the tail are pale greenish yellow; densely covered with lead-coloured dots and dashes, which are so densely crowded at the edges of the shield that they almost completely merge into these colours there. On the lower part of the tail the dark spots are somewhat sparser than on the belly, especially on the upper part of it, and also the upper side of the tail is more brownish than the back. —
Only one individual. —

It is surprising to us that Müller did not compare the two species, possibly because he did not consider them closely related since he placed them in different genera. The descriptions are bound as successive pages (NNM001001113_068 and _069), and both collected at Lobo Bay in August 1828. His manuscript descriptions are, however, on different paper formats, which raises the question of when and by whom the order of these sheets of paper was determined. Was this the notebook Müller used on site? Or was the order of the pages, arranged roughly by genus, determined by him or someone else later?

In van Oort's "Lyst der teekeningen" (NNM001001115; list of drawings), unfortunately undated, we find one drawing of each species: *P. chlorogastra* and *E. oculiferus*. This confirms that Müller initially considered them to be distinct species.

While Schlegel (1837a) considered both of Müller's specimens as representing the same species, Günther (1872), with additional specimens, recognised them as different, naming the species represented by Müller's *Psamophis chlorogastra* as *Diemenia schlegelii*. Günther primarily based his description on two additional specimens from Misool, purchased in 1870 from the London natural history dealer Charles Jamrach. However, Günther, by including citation of one of the snakes figured in Schlegel and Müller in his description of *Diemenia schlegelii*, makes Müller's *chlorogastra* specimen, the subject of that figure, a third syntype of *schlegelii*.

Brongersma (1934) resurrected Fitzinger's 1843 name *Aspidomorphus* as the genus for both species. He also recognised Schlegel's error in combining two species under the single name *muelleri*, and provided an extensive comparison between the two. Brongersma reviewed the history of the two species and identified past errors, particularly noting that Günther had erroneously allocated the snakes illustrated by Schlegel and Müller to the wrong taxa—the snake in their Fig. 2 with the spotted head (Müller's *ocelliferus*) was the one with the high ventral counts, while Günther had identified *schlegelii* as having lower ventral counts. Consequently, Brongersma assigned the name *Aspidomorphus schlegelii* to the snake figured on the left of Schegel and Müller's plate (Fig. 1)—*Psammophis chlorogastra* in Müller's original handwritten terminology. Accordingly, the snake on the right side, which Müller named *Elaps oculiferus,* is now *Aspidomorphus muelleri*. Brongersma also identified Müller's original specimens in the Naturalis collection in Leiden: RMNH.RENA 1402, Lobo, collected by Müller, for the holotype of *muelleri* (Fig. 5) and RMNH.RENA 1403, same data, for the *schlegelii* specimen. McDowell (1967) provided redescriptions of the two species, noting also that *schlegelii* (which he misspelled as *schlegeli*) differs from *muelleri* in features of the maxillary bone and anterior mandibular dentition. Although Brongersma recognised multiple subspecies within *muelleri*, later morphological and genetic studies (McDowell 1967; Metzger et al. 2010) have failed to find evidence for these subspecies, although the genetic work suggests that *A. muelleri* and *A. schlegelii* may harbour cryptic species in eastern New Guinea (Metzger et al. 2010).

Although the taxonomy of *Aspidomorphus* remains to be completely resolved, it is obvious that Müller was correct in his initial assessment, distinguishing two species at Lobo Bay.

COLUBRIDAE

Dendrophis capistratus Müll. (= *Dendrelaphis calligastra* (Günther 1867) or *D. lorentzii* (Lidth de Jeude 1911))

Müller's description of this snake is based upon one specimen only, which was almost one metre long. The black stripe which runs through the eyes along the "Rüßelschild" (rostral) suggests the Latin epithet "*capistratus*" (harnessed). Next to the entry in his undated "Catalog" (NNM001001423), Müller records the scale numbers 182 + 129, which differ from the ones given in his description below. In a footnote, he points out that it is the only species on the list that was not caught near Lobo Bay, but a few weeks earlier "von der Rivier Utanata" (NNM001001423; from the Rivier Utanata). The expedition arrived at the Utanata River on 3 June and stayed there for a week (Jacobs and Shea 2022).

In addition to this specimen from New Guinea, Müller mentions three other *Dendrophis* species in his other writings: *Dendrophis decorus* (NNM001001113_159) from Java and Sumatra; *D. rhodopleuron* (_161–162) from Amboina, and *D. picta* (_163) from Timor (Koepang), which is "Überall auf Timor gemein" (common everywhere on Timor). For the latter, above the line—apparently inserted later—we find the addition "u. Samao" (and Samao). Müller thus clearly distinguished several species within the genus.[11]

Tree snake specimens also feature several times in the transport lists, but without any specimen specifically from New Guinea. In the transport list of an early shipment in 1826, we find three specimens listed as *Dendrophis picta* Boie, collected by Kuhl and van Hasselt from the First Commissie.[12] This shipment was sent off years after Kuhl's and van Hasselt's deaths, most probably by van Raalten, on 31 April and arrived at the Museum on 23 July 1826. To our knowledge this is the only shipment-list that was compiled subsequently in the Netherlands to document receipt of a shipment by Schlegel.

Müller, however, gives the place of origin for his own *pictus* as Koepang on Timor. In his "Catalogus" shipment-list of 1831, we find three entries for *Dendrophis*. The first is an entry of two specimens of "Dendrophis ?" "van Timor" (NNM001001436_004) which is one of the very rare cases that Müller left the exact species denomination open. Again he seems to be forced to add a question mark on the next page under the heading "van Poeloe Samao en Java": "Dendrophis ? 3. [specimens]". And a third time Müller puts a question mark in connection with this genus, listing three specimens

from Amboina as "*Dendrophis polÿchrans* ? Rein[wardt]." which he corrected himself with "rhodopleuron?", adding a question mark, though.[13]

Müller draws a comparison to his own description of *D. decorus* in his description of *capistratus* and emphasizes the colouration of the upper parts as "olivengrün" (NNM001001113_163; olivegreen) and the lower side of the body and tail as "hell gelblichgrün" (bright yellowgreenish). Obviously, Müller considered *D. decorus* to be the species most similar to his *D. capistratus*.

Without direct examination of the specimen used by Müller to describe *D. capistratus*, a reliable assignment to taxa accepted today will not be possible. The taxonomy of the genus in New Guinea (now *Dendrelaphis*[14]) remains incompletely resolved. The most recent revision, by Rooijen et al. (2015), recognises nine species in the region, but many of these are poorly defined; and the authors of that study were only able to examine limited samples, leaving distributions uncertain. One possible identification would be *Dendrelaphis calligastra* (Günther 1867), a species described from Cape York in Australia, but now recognised as wide-ranging across New Guinea and the Solomon Islands as well as north Queensland; specimens assigned to that species were collected as far west as the Vogelkop, and south to the Aru Islands, but not yet from the south coast of Indonesian New Guinea (Rooijen et al. 2015; Rooijen and Vogel 2016). A second possibility (see Jacobs and Shea 2022:50) is *D. lorentzii* (Lidth de Jeude 1911), described from a specimen from Sabang, on the Lorentz River, approximately 300km east of the Utanata River, but also on the south side of Indonesian New Guinea. Although this species is "very closely related to *Dendrophis calligaster*" (Lidth de Jeude 1911:274), it differs from it in colouration, number of ventrals and subcaudals, and relative eye size (Rooijen et al. 2015). The specimen described by Müller appears to have subcaudal counts more in the range of *lorentzii*, but the illustration by van Oort (Fig. 6) does not show the speckled head dorsum that characterises that species (Rooijen et al. 2015).

Müller's manuscript in transcription and English translation

(Gassó et al. 2020: (NNM001001113_160)

Dendrophis capistratus Müll. [crossed out, *picta (variet.)* above the line]

Neu=Guinea (Fluß Utanata)
Junÿ 1828

185 + 130.
Gz. Lg. [= Ganze Länge] *mit Schz.* [= Schwanz] *3′ 3‴* [= 982 mm]*; Schz.* [= Schwanz] *1′* [= 325 mm]; *Kopf lang 9 ²⁄₃‴* [= 22 mm], *hinten breit 4 ½‴* [= 10.2 mm], *hoch über der Stirn 3‴* [= 6.8 mm].

Totalhabitus ganz wie Den. d ecorus. y.
Grundfarbe der obern Theile olivengelblich, mit kupferrothlichen Anstrich; ein schwarzer Streif zieht sich um das Rüßelschild, die Nasenlöcher einschließend durch die Augen, und so gegen 6" [= 163 mm] *längs jeder Seite des Halses / da gewöhnlich eine Schuppe einnehmend, abwärts; untere Seite des Körpers u. Schzs.* [= Schwanzes] *gelblichblau, an den Rändern der Schilder schwach röthlich u. schwärzlich marmorirt. Iris rothlichbraun. — Schuppen glatt. –*

Nur ein Individuum vom Fluße Utanata. —

185 + 130.
Whole length with tail 982 mm; tail 325 mm; head length 22 mm, breadth behind 10.2 mm, height above forehead 6.8 mm.

Total habitus quite like *Den. decorus*. y.
Ground colour of upper parts olive-yellowish, with a copper reddish tinge; a black stripe extends around the rostral shield, including the nostrils, through the eyes, and so about 163 mm along each side of the neck / usually occupying one scale, downwards; lower side of the body and tail yellowish blue, edges of scales faintly reddish and blackish marbled. Iris reddish brown. — Scales smooth. —

Only one individual from the Utanata River. —

Fig. 5. The holotype of *Elaps muelleri* Schlegel preserved in Leiden (RMNH 1402; photo: M. O'Shea in 2014). The subspecies designation on the label refers to the division of *Aspidomorphus muelleri* into subspecies by Brongersma (1934), although these subspecies are no longer recognised (Metzger et al. 2010).

COLUBRIDAE

Dipsas lacrÿmans Müll. (= *Boiga irregularis* (Bechstein 1802))

Müller's description of this species notes that only a single specimen was collected at Lobo Bay, a specimen that can no longer be identified in the Naturalis collection. Comprehending the complex issues around Müller's description of the species and Schlegel's subsequent treatment of that species name requires an initial review of the knowledge of *Dipsas* species names available to and used by Müller and Schlegel.

Dipsas was originally described by Laurenti (1768) for a single species of snake thought to be from Zeylona (Sri Lanka), but now known to be from South America. At the time of the second group of the Commissie, the genus had been expanded to include a number of Asian snakes—mostly now in the genus *Boiga*, commonly known as cat-eyed snakes. Boie had paid particular attention to the cat-eyed snakes in his work for the "*Erpétologie de Java*". While that work remains unpublished and the original manuscript largely lost, we can obtain an indication of his conclusions from the inclusion of some of the Latin diagnoses from it that were published in Friedrich Boie's classification of snakes (F. Boie 1827). Friedrich listed eight *Dipsas* species from Asia, four of which were new and accompanied by descriptions ascribed to his brother's manuscript, while also ascribing some of the specific names to others preceding his brother:[15] *cynodon* Cuv[ier]., *dendrophila* Reinwardt, *drapiezii*[16] and *multomaculata* Reinw[ardt]., as well as a previously described species, *irregularis*, all of which are still considered valid species of *Boiga.* While Boie attributed *irregularis* to Merrem, it had actually been described many years earlier as *Coluber irregularis* by Bechstein (1802). The publication of descriptions of the first four species, extracted from his brother's manuscript, validated the names.

In Müller's and van Oort's manuscripts in the online-archive, the names *cynodon*, *dendrophila* and *drapiezii* are used, with the same attributions of names to Reinwardt and Cuvier. As we have noted for previous species, it is unlikely that Friedrich Boie's paper, published in 1827, had reached the Second Commissie by the time they were in New Guinea, and hence they must have been working with Heinrich's "*Erpétologie*

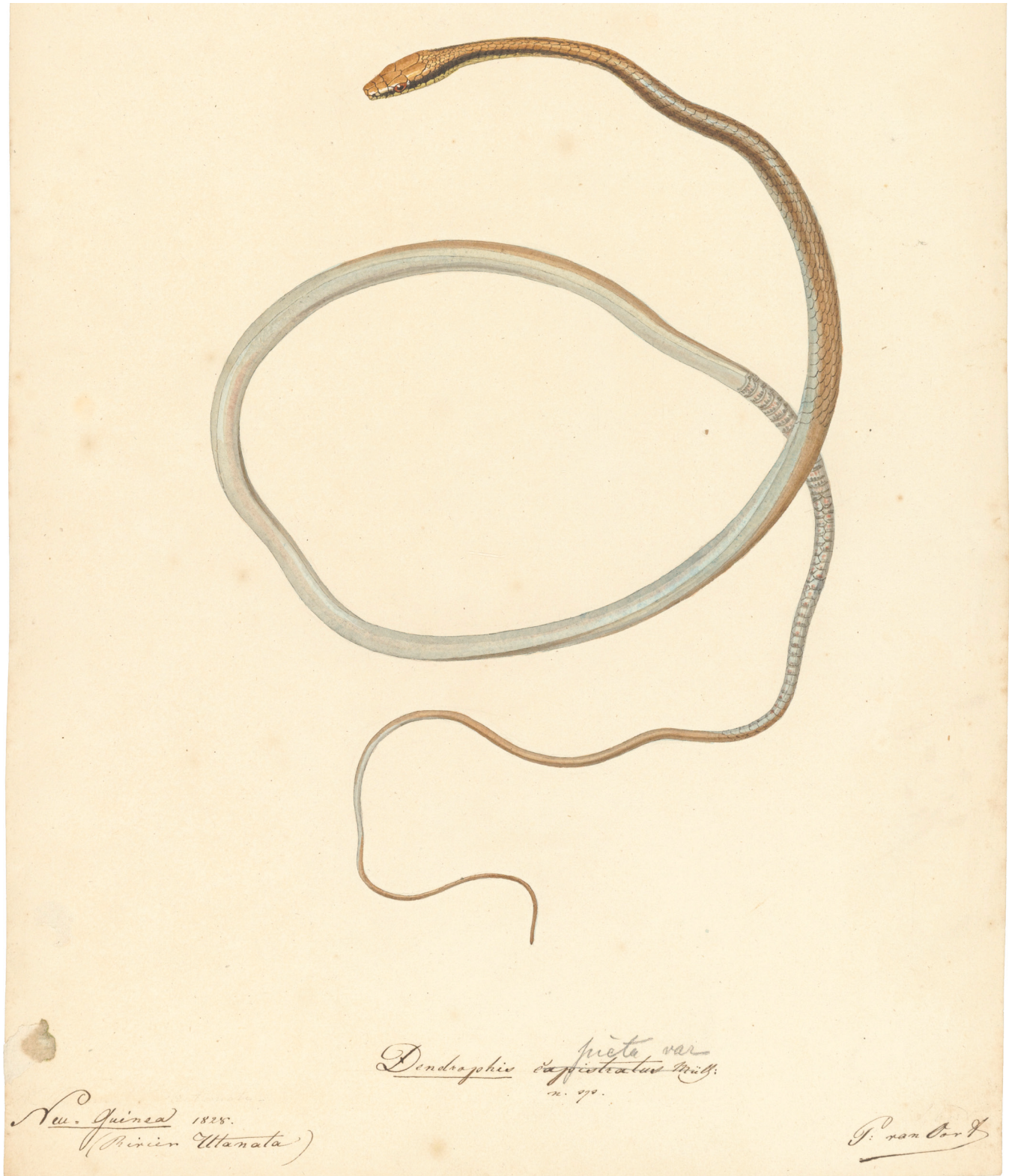

Fig. 6. The caption of the original drawing reads: "*Dendrophis capistratus* Müll: n. sp." (NNM001000651_001). The epitheton and abbreviation of the name are crossed out and "picta var" is written above by Müller himself; so, we find here precisely the same correction as in Müller's description (see below). In the right-hand corner Müller—as so often—noted the name of the artist "P: van Oort", while in the left again the location is recorded: "Neu=Guinea 1828. (Rivier Utanata)".

The copy (NNM001000651_002) bears the caption, written on auxiliary lines to guarantee a clean and straight typeface: "*Dendrophis capistratus* n sp Mull", without any correction, and in the line below "Nieuw Guinea (Riv Oetanata)".

de Java" manuscript or plates after his death, or at least been very familiar with the manuscript prior to Boie's death.

Schlegel was also familiar with Boie's species, listing them in 1826 with the aim of preventing others from publishing the names themselves (Schlegel 1826, 1827) and dealt with them after Boie's death in his "*Essai*" (the more extensive account covering all species) and his "*Abbildungen*" (covering *drapiezii* as an example). These published accounts are supplemented by manuscript notes by Schlegel (NNM001001389) in the online-archive.[17]

The modern identity of Müller's *Dipsas lacrÿmans* is clear, as only one species of *Boiga* is known from New Guinea: *B. irregularis*, and the illustration by van Oort closely resembles that species. However, Schlegel considered *lacrÿmans* to be conspecific with *Dipsas drapiezii*, which does not occur in New Guinea.

In Müller's undated "Catalog" (NNM001001423) only one specimen is listed under the name *lacrÿmans*—with the correction "Drapiezii" in pencil in Schlegel's hand above the crossed-out epithet.

Dipsas lacrÿmans also appears in the "Catalogus" shipment-list of February 1831 (NNM001001436_004). We cannot be sure about the relation of the two lists—they may both refer to the same specimen, or two different individuals (the latter would have to involve a specimen from a different locality).

In van Oort's undated list of his drawings (NNM001001115_002) four entries refer to drawings of *Dipsas*. For the first entry, an epithet is lacking; possibly Müller had not identified the taxon yet or was unsure of its identity. The second listing is to *Coluber irregularis* Merr. (now *Boiga irregularis*). Following this is *Dipsas lacrymans* Müll (which we presume relates to the illustration reproduced here as Fig. 7) and then *Dipsas Drapiezii* Boie (presumably referring to the painting reproduced as Fig. 8) which suggests again—as with *Psammophis chlorogastra* and *Elaps oculiferus*—that Müller considered *D. lacrymans* and *D. drapiezii* to be different taxa and instructed van Oort accordingly, while Schlegel considered the two to be synonymous and corrected "lacrymans" to "Drapiezii" (see below, and Fig. 7, version _002).

There are two paintings of *Dipsas* from Lobo Bay (NNM001000654_001–002), both originally labelled as *D. lacrÿmans*. The first is reproduced here (Fig. 7), while the second—according to the editors of the online-archive—is a duplicate.

Although the duplicate is very precise, closer examination reveals slight deviations in detail, even though the contours of the snakes are absolutely congruent. This precision suggest that freehand drawing was unlikely; perhaps the outlines were traced, possibly with needles. The reasons why some drawings in the online-archive were copied are unknown. It is not known who copied them and when—it is conceivable that they were copied in Leiden and annotated by Schlegel. The different captions indicate that _001 is the original.

As in similar cases, this drawing gives insights into Pieter van Oort's procedural manner, which was commonly used by many draftsmen in the field. With an abundance of natural history specimens collected at Lobo Bay over a short period, he initially focused on the distinctive, taxonomically significant parts of the body, likely pointed out to him by the scientists. The completion of the painting could then be deferred.

The differences between the two versions are minute and insignificant for taxonomic purposes. The overall structure and even the arrangement of the scales remain consistent, with slight variations primarily in colouration and pattern. The duplicate drawing, annotated by Schlegel as "*Dips. Drapiezii*" much later, after its arrival in the Netherlands, logically cannot have been the one referred to in van Oort's list as "*Dipsas Drapiezii*", sent to the Netherlands in February 1831. It is unlikely that van Oort, who left his original drawing only half-finished, would have had time to create a duplicate incomplete drawing at the time.

A third drawing (Fig. 8) further complicates the understanding of Schlegel's interpretation of the taxonomy of Indonesian cat-eyed snakes. The caption of this drawing bridges both *Dipsas Drapiezii* and *Coluber irregularis.*

We are convinced Müller himself wrote the original caption on this drawing. The reference to the variation—added with a different pen—appears to be from Schlegel.

The picture is reminiscent of quite a few of van Oort's drawings with only the anterior, head, and the tail completed in detail (compare Fig. 7 and Fig. 8). Tapos on Java, where the snake was caught according to the first version of the drawing (Fig. 8), is an area between today's Bogor and Jakarta. The snake depicted in Fig. 8 and labelled as *Dipsas drapiezii* must have been caught during the expedition from Buitenzorg to Tapos around July/August 1827, while Boie was still alive and prior to the Commissie leaving for New Guinea, whereas the snake illustrated in Fig. 7 was collected in the vicinity of Lobo Bay a year later. In his notes on *Dipsas lacrÿmans* Müller does not mention the snake previously collected near Tapos and depicted on Fig. 8.

In our view the snakes illustrated in Figs. 7 and 8 represent different species of *Boiga*, and neither represents *B. drapiezii*. The snake in Fig. 7 originates from New Guinea and has a clearly drawn loreal scale indicating it is *irregularis* and not *drapiezii.* The snake in Fig. 8 represents a species from Java, within the range of *drapiezii*, and although it is so labelled, it does not resemble that species. The green head, pale upper lip, reddish body, and very narrowly-spaced dark bands on the body are characteristic of *Boiga nigriceps* (Günther 1863), while *drapiezii* has a very different colour pattern, with more widely-spaced body bands and the head is not green.

Schlegel's confusion over the identity of *drapiezii* is understandable. In his "*Essai*", he notes that in addition to the "very old" Lobo Bay specimen, Boie had told him he had also seen specimens of *drapiezii* from Ceylon (Sri Lanka) in the collection of the South African Museum, and that Schlegel had also received two specimens from Manado in Celebes (Sulawesi) from a Dr Strauss. Neither locality is currently considered part of the distribution of *drapiezii* (de Silva 2001; de Lang and Vogel 2005).

Fig. 7. *Dipsas lacrÿmans* (NNM001000654_001). A second illustration (_002) is labelled as a copy of _001 by the editors of the online-archive and is not reproduced here.

The first, slightly larger sheet _001 is inscribed by Müller in the familiar manner: at the bottom centre "Dipsas lacrÿmans Müll n. sp.", in the right corner the name of the draughtsman "P. van Oort" and in the left the locality "N. Guinea. 1828. (Bay Lobo)". In contrast, on _002, in different handwriting—obviously Schlegel's—is the species name "Dips. Drapiezii très vieuve" (very old) with the addition below "lacrymans Müll". The name of the draughtsman in the right corner is missing; on the left we read "N. Guinée" in French and below "Baie Lobo". In his "*Essai*", though, Schlegel specifies that "un très vieux individu" was obtained "à la côte occidentale de la Nouvelle Guinée" by Macklot and Müller (Schlegel 1837a part 2:270; a very old specimen, on the west coast of New Guinea). The same description is provided by Schlegel in his "*Abbildungen*", in German. So, the same individual is assigned to two different species: *Dipsas lacrÿmans* by Müller on site and *Dipsas drapiezii* by Schlegel years later in Leiden.

In his handwritten, unpublished notes on *D. drapiezii* (NNM001001389_023), Schlegel noted differences from *Dipsas cynodon*, such as "le museau beaucoup plus court" and "à tronc moins haut" (the snout much shorter, with a lower trunk); but in *D. drapiezii* "La plaque du frein manque ordinairement" (the frenal [loreal] scale is usually missing). Apart from the absence of a loreal, Schlegel does not specify the head scalation, however, he included two meticulous head studies at the beginning of his notes. He concludes his notes with the scale count of "259 + 114" and "264 + 154". Overall he describes the snake: "Formes et taille à peu près de Cynodone" (forms and size approximately that of Cynodone).

While Schlegel appears to have been confused over the morphological and distributional limits of *Dipsas drapiezii*, he had seen specimens of the species, as the illustration accompanying his description of *drapiezii* in his "*Abbildungen*" (Fig. 9) does represent that species. The account of the species in his "*Essai*" (Schlegel 1837a part 2:270–271) mentions several specimens collected by the members of the Commissie: about six individuals collected by Boie "dans les fôrets vierges du Parang", as well as the "variété" "recueillie dans les fôrets près de Tapos", and the "très vieux" individual from New Guinea (from the virgin forests of Parang; collected from the forests near Tapos; very old individual). The latter two represent respectively *Boiga nigriceps* (Fig. 8) and *B. irregularis* (Fig. 7), but the former six may be *B. drapiezii*, with "Parang" very similar to the locality name "Parung" annotated on Fig. 9. Similar information was provided in the "*Abbildungen*" (Schlegel 1839a:49).

Müller's manuscript in transcription and English translation

(Gassó et al. 2020: NNM001001113_093)

Dipsas lacrÿmans Müll. [crossed out, above the line. *Drapiezii* Boie] *Neu=Guinea August (Lobo) 1828.*

267 + 102.
Länge des Körpers, von der Schznspitze [= Schnauzenspitze] *bis zum Schz.ende* [= Schwanzende] *6′ 6″* [= 2113 mm]; *Schz.* [= Schwanz] *cÿlindrisch* [crossed out, above the line], *stumpfspitzig 1′ 1″* [= 29 mm]; *Kopf lang 1″ 5 ²/₃‴* [= 40 mm] *hinten breit 11 ½‴* [= 26 mm]; *hoch über der Stirn 7 ²/₃‴* [= 17 mm] — *Augen 3‴* [= 6.8 mm].

Gestalt im Ganzen durchaus [above the line] wie Dip[sas].: *dendrophila Rw. und cÿnodon Cuv.* [above the line]. *Körper stark comprimirt; Kopf noch breiter als der Hals, dick, herzförmig; Augen groß, hochliegend mit einem noch großere sc*[uta]. *supercil*[aria]. *bedeckt. Nasenlöcher ebenfalls groß, schräg nach hinten* [*etwas* = crossed out] *aufwärts, vertical oval auslaufend. 9 Schilder auf der Haube; Wirbelschild kurz, breit vorne und ein wenig concav; hinten stumpf dreÿeckig; Rüßelschild hoch u. breit, herzförmig, oben stumpf eckig auf die Haube vorspringend; auf jeder Seite der oben Kinnlade 9 Randschilder; unten auf Seite 1 Nasen= u. 12 Randschilder. Die Schuppen des Körpers sd.* [= sind] *rhombisch; die der mittleren Reihe größer u. sechseckig; durchaus glatt. Schz.* [= Schwanz] *stätig, cÿlindrisch mit stumpfer Spitze; die Farbe der obern Theile ist ein graubepudertes Braun mit einzelnen schwärzlichen Fleckchen, welchen letztere auf dem Hinterhals* [wo sie= crossed out] *mehrere zum Theil unterbrochene Querbinden bilden; ebenso zieht auch ein etwas unterbrochener schwärzlicher Längsstreif vom Hinteraugenwinkel längs der Seite des Occiputs: Grundfarbe des Bauches blaß gelb licht* [in error; = lich] *bläulichgrau marmorirt u. jedes Schild noch gegen dem Seitenrand zu, mit einem dunklen Fleck versehen; auf der untern Seite des Schzs.* [= Schwanzes] *ist die bläulichgraue Schattirung als die Grundfarbe zubetrachten auf der nur sehr feine blaß gelbliche Pünktchen u. Fleckchen stehen. — Iris gelb.*
Nur ein Exemplar. —

267 + 102.
Length of body, from tip of snout to end of tail 2113 mm; tail cylindrical, blunt-tipped 352 mm; head length 40 mm breadth behind 26 mm; height above the forehead 17 mm — eyes 6.8 mm.

Shape on the whole quite like *Dipsas*.: *dendrophila* Rw. and *cynodon* Cuv. Body strongly compressed; head even broader than neck, thick, heart-shaped; eyes large, high-set, covered with an even larger supraocular. Nostrils also large, slanting sideways and slightly upwards, vertically oval tapering. 9 shields on the hood; frontal shield short, broad in front and little concave; behind bluntly triangular; rostral shields high and broad, heart-shaped, at the top bluntly angular protruding on the hood; on each side of the upper jaw 9 labial shields; below on each side 1 nasal and 12 infralabials. The scales of the body are rhombic; those of the middle row larger and hexagonal; quite smooth. Tail stubby, cylindrical with blunt tip; the colour of the upper parts is a grey-powdered brown with singular blackish spots, the latter forming several partly interrupted transverse bands on the neck; likewise a somewhat interrupted blackish longitudinal stripe runs from the posterior corner of the eye along the side of the occiput: ground colour of the abdomen pale yellowish bluish grey marbled, and each scale has a dark spot towards its edge; on the lower side of the tail the bluish-grey shading is to be regarded as the ground colour on which there are only very fine pale yellowish dots and spots. — Iris yellow.
Only one specimen. —

Müller's attribution of the epithets *dendrophila* and *cynodon* to Reinwardt and Cuvier respectively is curious and reflects a similar attribution by Friedrich Boie (1827). Boie refers to Heinrich's unpublished "*Erpétologie de Java*" for both attributions, which apparently relate to unpublished manuscript names in the Leiden and Paris collections respectively (see also Duméril et al. 1854:907, 1087).

Whether Müller was enticed by the large eyes of the *Dipsas* to choose "weeping snake" *Dipsas lacrymans*—"lacrimare" means to weep in Latin—as a name must remain uncertain. In the drawing of its head, at least, a tear-like element cannot be discerned, and the notes do not give any indication of the name either.

Why Müller named his Lobo Bay *Dipsas* as a new species remains puzzling in light of the prior work on the genus by Boie. Although the specimen described by Müller still appears in the undated transport-list of reptiles preserved on New Guinea, the "Catalog" (NNM001001423_001) as "*Dipsas lacrymans*", a specimen of "*Dipsas Drapiezii* Boie" is also found in the "Verzending M" transport-list of February 1831 (NNM001001437_002) next to seven specimens of "*Dipsas irregularis* Merr." from Ambon. Müller must therefore have known *D. drapiezii* not only via Boie's "*Erpétologie de Java*" but from living specimens as well. As the first specimens had already been caught and drawn on Java in 1827, he already knew the taxon when he described his *D. lacrymans* on New Guinea in 1828, and therefore must have considered it different to *drapiezii*. At the same time, he must have collected *irregularis* on Ambon either prior to the time in New Guinea or afterwards, and also considered it different from his *lacrymans*.

Tropidonotus picturatus Müll. (= *Tropidonophis picturatus* (Schlegel 1837a))

Van Oort (NNM001001115_002) mentions five different *Tropidonotus* species in his list of drawings, four of which he attributes to Boie and one to Müller: *T. picturatus* Müll, *T. rhodomelas* Boie, *T. subminiatus* Boie, *T. chrysargos* Boie and *T. trianguligerus* Boie. Only the first species occurs on New Guinea.

Nevertheless, today Schlegel (1837a) is attributed as first describer for *T. picturatus*, *T. chrysargos* and *Rhabdophis subminiatus*, while Heinrich Boie in F. Boie (1827) is given credit for *Xenochrophis trianguligerus* and *Rhabdophis rhodomelas*, although Boie attributes the latter name to Reinw[ardt].

In his first description of the species *picturatus*,[18] Schlegel in his "*Essai*" points out in his very first sentence that it was Müller who had named "un Tropidonote inconnu jusqu'à present" (Schlegel 1837a part 2:314; a hitherto unknown *Tropidonotus*). From the details of Schlegel's text, one must suspect that he had before him not only the specimens caught and sent by Müller, but also Müller's handwritten description (see below). And more than that: Müller had by 1837 already returned home and was of course available to his superior and sometimes co-author with all the information he needed.

Schlegel mentions "ils en ont recueilli cinq individus près de la baie Lobo" (1837a part 2:314; they collected five individuals near Lobo Bay) and expressly refers to the specimens captured and described by Müller with the qualification "que les belles teintes qui ornent la tète et le cou s'effacent totalement après la mort" (1837a part 2:314–315; that the beautiful hues on the head and neck fade completely after death). His colour indications thus are necessarily adopted directly from Müller and from van Oort's drawing (Fig. 10). The fading of colours in alcohol over the decade between the collection of the specimens by Müller in August 1828 and their examination by Schlegel for his publications from 1837 is also apparent in the ventral colours: Schlegel reported the venter as only "d'un brun terne" (p. 315; a dull brown), which Müller described as "schmutzig blaß gelb" (dirty pale yellow).

From the eye, "deux raies noires", which are also very clearly marked on the head studies that accompany Schlegel's description ("*Essai*" Atlas, Pl. XII, figs. 8–9; two black vertical stripes), run along the side of the neck; the upper side of the body is "d'un brun schisteux noirâtre" (blackish slate brown) in Schlegel's vocabulary. The colour of the iris both conformably describe as reddish brown: Müller—see below—"rothbraun" (reddish brown) and Schlegel in his "*Essai*" (p. 315) "d'un brun rouge" (of a brownish red). More interesting than the similarities may be the differences: Schlegel concludes by emphasising "l'intérieur de la bouche rouge de brique, mais les lèvres sont jaunes" (p. 315; the inside of the mouth [is] brick red, but the lips are yellow), information that is missing in Müller. Clearly, Schlegel used other models besides the five specimens captured by Müller. Thus, the numbers of scales given also differ: Müller's "135 + 65 – 134 + 57" are contrasted with Schlegel's "128 + 52 or 134 + 62", although there is of course no evidence that the two used the same specimens for their count. The length figures of "0,45 + 0,14" for adults in Schlegel correlate roughly with 42.5 + 14 cm in Müller; the difference is negligible. Besides Müller's five specimens Schlegel had access to another individual from the Paris Natural History Museum: "M. M. Quoy et Gaimard ont rapporté un seul individu de cette nouvelle espèce" (Schlegel 1837a part 2:314; Monsieurs Quoy and Gaimard reported a single individual of this new species). Quoy and Gaimard collected in western New Guinea, within the range of *T. picturatus*, on two occasions, first during the *Uranie* expedition, when they visited Rawak and nearby islands between 16 December 1818 and 6 January 1819 (Freycinet 1829) and later during the first voyage of the *Astrolabe*, when they visited Dorei (modern day Manokwari) between 25 August and 6 September 1827 (Duyker 2014). We know for certain that Schlegel was in Paris from April to July 1835 (Kaiser et al. 2021:59), well after both expeditions had returned to France. Müller himself did not reach the Netherlands again until about two years later, at the end of August 1837, the same year that Schlegel's "*Essai*" appeared. The insights gained by Schlegel in Paris may have been incorporated into the preparation of the manuscripts. Müller's hand-

Fig. 8. *Dipsas Drapiezii var Schleg* 270 (NNM001000702). The name of the artist is not given and according to the editors of the online-archive "unknown"; it may be assumed that it was Pieter van Oort, who had already drawn the species for Boie's "*Erpétologie de Java*" (pl. 38). The first line reads "Dipsas" in Müller's hand, followed by "Drapiezii var. Schleg 270", in a different hand, presumably added by Schlegel, the number referring to the page in Schlegel's "*Essai*" where this specimen is again identified as a variety of *D. drapiezii*. In the line below is: "Coluber irregularis Merr:", again in Müller's hand, and still beneath that the location information: "Java / Tapos 1827".

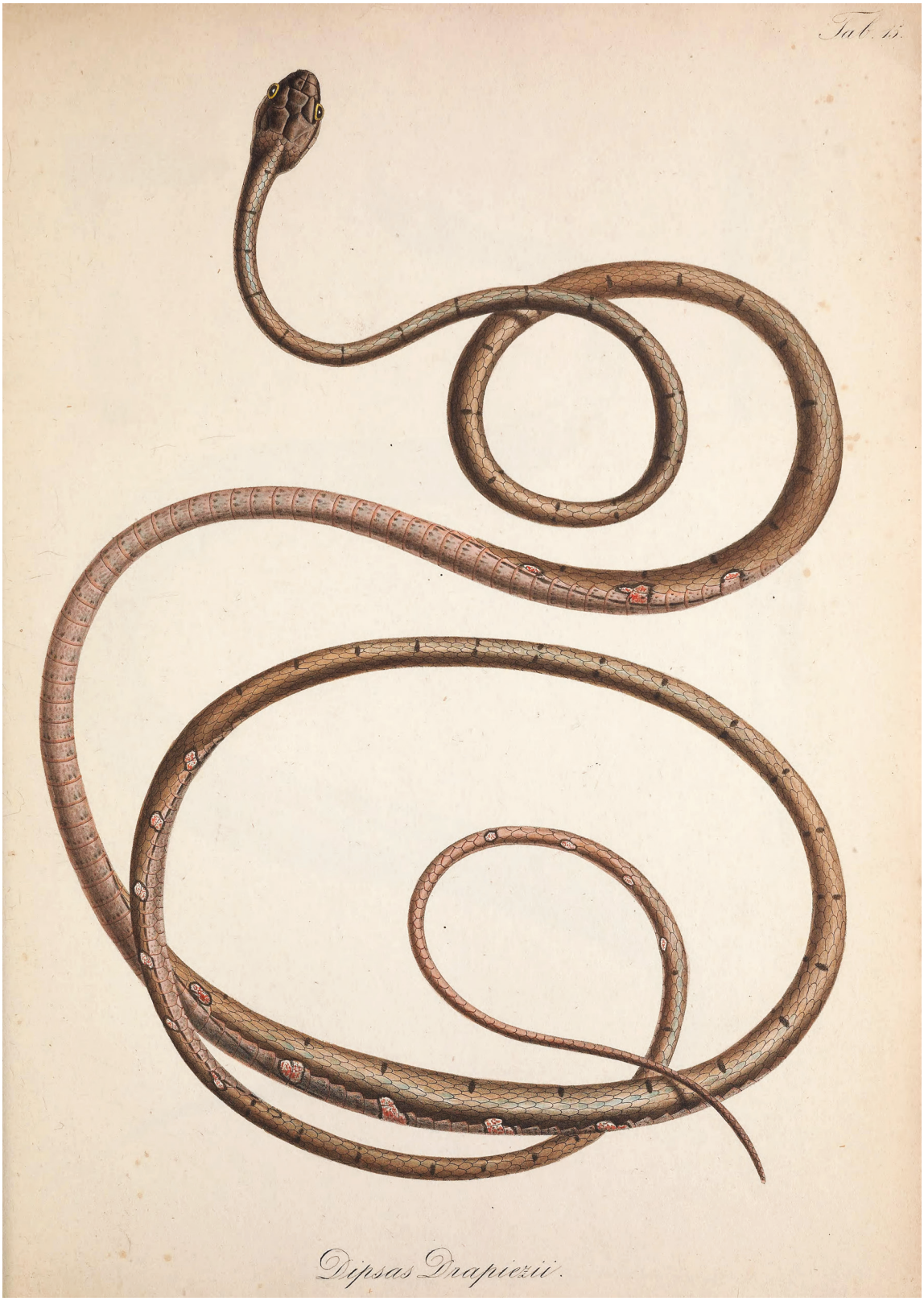

Fig. 9. *Dipsas Drapiezii* (Schlegel 1837–44 Atlasband: Tafel 15 [published in the second decade in 1839; Jacobs and Koch 2021:71]). NNM001000653 (not reproduced here) is the original template of this illustration. It shows the name of the snake as well as the reference "Tab. 15" at the top of the sheet and a barely readable indication as to the place of discovery "Parung Tesi 1827" in handwriting. Although the posture of the anterior of the body is maintained in the printed version, the entire posterior portion has been rearranged. The artist—likely van Oort—had indicated an alternative position of the tail.

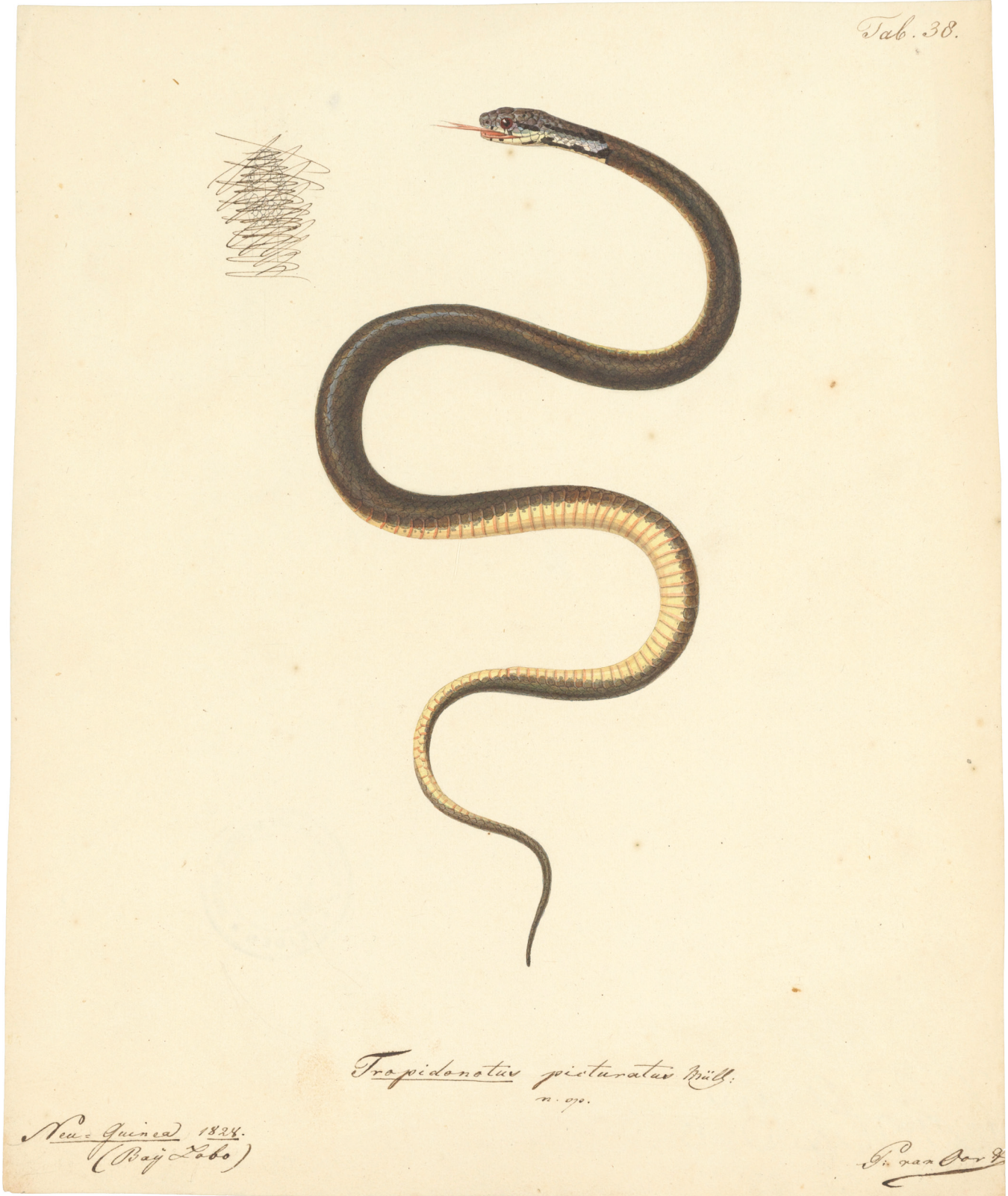

Fig. 10. *Tropidonotus picturatus* Müll: n. sp. (NNM001000652). "Neu-Guinea 1828. (Baÿ Lobo)" in the left-hand corner and in the lower right-hand corner is the name of the painter: "P: van Oort". It was Müller who wrote the caption. In this sense van Oort's name is not a signature but merely an information with regard to the drawer. The indication in the upper right-hand corner "Tab. 38" suggests a collection of drawings possibly for publication.

written notes may also have reached Schlegel shortly before the publication of his "*Essai*".

Again, the moral dimension of Schlegel's basing his work on Müller's achievement should not and cannot be assessed here (Jacobs 2022:39), although it does contrast with the insistence in his previous writings for recognition of the primacy of Boie's names (Schlegel 1826, 1827). Schlegel does, after all, publish his description of Müller's *T. picturatus* in a broader monograph covering snakes in general. He does clearly identify the origin of the taxa described, even if he does not explicitly cite Müller's handwritten notes as a source. And on a legal level, he undoubtedly felt legitimised as a superior to dispose of knowledge that his subordinate, who was also paid for this, had obtained. In contrast, Boie was Schlegel's peer, his predecessor at the Natural History Museum at Leiden.

Müller's manuscript in transcription and English translation

(Gassó et al. 2020: NNM001001113_098)

Tropidonotus picturatus Müll.	*Neu=Guinea. August (Lobo) 1828*
135 + 65 — 134 + 57 *Gz. Lg.* [= Ganze Länge] *mit Schz.* [= Schwanz] *1′ 8″ 10‴* [= 565 mm]; *Schz.* [= Schwanz] *5″ 2‴* [= 140 mm]*; Kopf lang 7 1/3‴* [= 17 mm]*, hinten breit 5‴* [= 11 mm]*, hoch über der Stirn 2 ¾–3″* [= 62–68 mm]. —	135 + 65 — 134 + 57 Whole length with tail 565 mm; tail 140 mm; head length 17 mm, breadth behind 11 mm, height above forehead 62–68 mm. —
Kopf unterschieden, länglich oval, an den Wangen etwas aufgeblasen, von da oben seitlich nach vorn zu stark abschüßig; Schnauze abgeflacht; Nasenlöcher: klein, rundlich, Augen 1 ½‴ [= 3.4 mm] *groß; 9 Schilder auf der Platte, von gewöhnlicher Form; Rüßelschild breit, oben rundlich unten concav; nur wenige Schuppen an der Kehle; die Schuppen des Rückens u. Schwzs.* [= Schwanzes] *mittelmäßig länglich, viereckig u. überall stark gekielt. —	Head distinguished, elongated oval, somewhat inflated at cheeks, from up there laterally to the front rather much sloping; muzzle flattened; nostrils: small, roundish, eyes 3.4 mm large; 9 shields on the plate [likely referring to the flat head dorsum], of common shape; rostral shield broad, roundish above, concave below; only a few scales on the throat; the scales of the dorsum and tail moderately elongated, quadrangular and strongly keeled everywhere. —
Kopf u. Nacken gräulich braun, letzteres mit bläulichem Anstrich; vom unteren= u. hinteren Augenrand ziehen sich zweÿ schwarze Längsstreifen in gleicher Entfernung schräg nach der Kehle, wo jeder am Ende durch eine Reihe Flecken ausläuft; ebenso steht noch auf jeder Seite des Nackens ein beÿnahe gleichlanger ebenfalls schwarz Längsstrich in deren Mitte sich ein ähnlich gefärbter Querfleck befindet; u. endlich auf dem Occiput bemerkt man noch einzelne, mehr oder weniger große, schwärzliche Tropfen. Rücken u. obere Seite des Schwzs. [= Schwanzes] *dunkelbraun mit oliwengelblichen Anstrich; die Seite der Schilder haben beÿ dieser Farbe einen bleÿfarbenen Anflug; Lippen, Kehle u. alle übrigen unteren Theile schmutzig blaß gelb, am unteren Rande sind die Schilder röthlich gelb angelaufen.*	Head and neck greyish brown, the latter with a bluish tinge; from the lower and rear eye corner two black longitudinal stripes extend diagonally in the same distance from each other to the throat, where a row of spots runs diagonally from each one and each one fades out in a row of spots. Likewise, on each side of the neck there is a black longitudinal stripe of almost equal length, in the middle of which there is a similarly coloured transverse spot; and finally, on the occiput one notices individual, more or less large, blackish drops. The back and upper side of the tail are dark brown with an olive-yellowish tinge; the side of the scales have a lead-coloured tinge in addition to this colour; lips, throat and all other lower parts are dirty pale yellow, at the lower edge the shields have a reddish yellow tinge.
*Iris rothbraun. —	Iris reddish brown. —
*Scheint ziemlich gemein zuseyn. In mehreren Exemplaren. —	Seems to be quite common. Several specimens. —

Although Schlegel's "*Essai*" mentions five individuals caught near Lobo Bay, other numbers appear in Müller's transport-lists. In a rather draft-like and undated "Catalog" (NNM001001423), three specimens are mentioned together with the scale number 133 + 56, counts which do not appear in Müller's description. The "Catalogus" list of February 1831 (NNM001001436_004) also records three specimens. Under the label "Reptilien van Nieuw=Guinea, Amboina en Timor" from the "Verzending M", also from February 1831 (NNM001001437_002), two specimens are given.

The genus name *Tropidonotus* (from the Greek τροπις (tropis) = keel and νοτος (notos) = back, alluding to the keels on the scales on the dorsal surface) was first published by Heinrich Boie (1826) in a paper dealing with Japanese amphibians and reptiles. He created the name as a modification of the name *Tropinotus*, previously published by Kuhl and van Hasselt (1822a), and also by a marginal remark by Kuhl when he reported by letter (8 Aug. 1821): "Von Schlangen erhielten wir noch 1 neuen *Tropinotus*, so dass deren Zahl jetzt 12 beträgt" (Kuhl and van Hasselt 1822b:475; From snakes we received 1 new *Tropinotus*, so that their number is now 12). Both of the latter papers provided insufficient detail to validate the name nomenclaturally, thus leaving Boie as the author. *Tropidonotus* was maintained as the name for the aquatic colubrid snakes for much of the next century, until it was replaced by the older *Natrix* Laurenti 1768 by Stejneger (1907), who identified *Coluber natrix* Linnaeus as the type species for *Tropidonotus*. With later splitting of *Natrix* into multiple genera (Malnate 1960; Malnate and Underwood 1988), the lineage representing the watersnakes of the Australopapuan region was given the name *Tropidonophis* (meaning "keeled snake"), a name first created as a subgenus of *Tropidonotus* by Jan (1863:72).

While Kuhl and van Hasselt (1822a) did not provide a description of *Tropinotus* in their published work, Kuhl's manuscripts include much more detail. In his handwritten, unpublished notes (NNM001001036_209–219), Kuhl describes no less than 16 new species of the genus. Schlegel was not only aware of these notes, but in many cases added references and corrections to them. Thus, the syllable "-do-" is found several times above the name "Tropinotus" to become "Tropidonotus", and references to Boie's "*Erpétologie de Java*" and other taxa also appear.[19]

The epithet of the species discussed here, "picturatus", refers to the pattern which looks as if "painted" or "embroidered". Of the five specimens collected by the expedition, three are still identifiable: RMNH 1076 and 1077 (two specimens under the latter number; Malnate and Underwood 1988:135), with RMNH 1076 being designated lectotype. All are registered as from Lobo Bay; collected by Müller and Macklot.

TYPHLOPIDAE

Acontias polygrammicus Müll. (= *Ramphotyphlops multilineatus* (Schlegel 1839a))

Müller described two species, *Acontias polygrammicus* and *Acontias coecus*, that he ascribed to the genus *Acontias*, a genus first created (as a subgenus of *Anguis*) by Georges Cuvier in 1816 in the first edition of his "*Le Règne Animal*".[20] The subsequent histories of Müller's *Acontias* species are complex, with neither being related to *Acontias* proper.

The question of genus affiliation alone makes the problem obvious. *Acontias*, in present taxonomy, is a limbless skink genus only known from Africa. Müller is aware of this when he refers to Duméril and Bibron (1839) in a nota bene on the page before his description of *A. polygrammicu*s (see below): "NB. In der Érpét. génér. T. 5 p. 801 wird blos eine einzige Acontias (A. meleagris von Süd. Africa) aufgeführt." (NNM001001113_106; NB. In the Érpét. génér. T. 5 p. 801, only one *Acontias* (*A. meleagris* from South Africa) is recorded). Logically Müller must have added this NB after 1839, the publication date of Duméril and Bibron's fifth volume, more than a decade after he wrote his description at Lobo Bay.

The confusion is increased when Müller brings a second genus into play in his preliminary remarks on *Acontias*, on the same page: "Dhaewolo (Ww) = slang / Java / Acontias und die Caeciliae werden hier Doewal genannt. Es sind dumme unbehülfliche Thiere die gleich den Würmern in der Erde leben und sich im Herausgraben äusserst träge zeigen." (Dhaewolo (Ww) = snake / Java / Acontias and the Caeciliae are called Doewal here. They are stupid, clumsy animals that live in the earth like worms and are extremely sluggish when digging themselves out).

Caecilians are present on Java, and it is possible that Müller had seen them at the beginning of the expedition, during the 19 months the expedition spent there. It is unclear what Müller is referring to here under the vernacular name of "Dhaewolo", Javan caecilians or the New Guinea snakes.

Duméril and Bibron (1839), to whom Müller referred, redescribed *Acontias meleagris* Cuvier and explained that the genus name went back to the Hellenized Syrian Lucian, who compared the skink to a throwing spear (Latin jaculus).[21]

However, the first species that Müller collected and referred to *Acontias* (*Acontias polygrammicus*) is a typhlopid snake, not a lizard. The genus *Typhlops*, meaning "blind-eyed" (τυφλος + οψ, typhlos + ops), was created by Oppel (1811)[22] for two species of snake that Linnaeus had assigned to *Anguis* (along with *meleagris*), but at the time of the Commissie's expedition to New Guinea, the distinction between *Acontias* and *Typhlops* was unclear. Cuvier (1816) recognised them as similar (*Acontias* on p. 60, *Typhlops* on p. 62), but Merrem (1820) treated them as very distant from each other: *Acontias* was covered on p. 80 as part of his Repentia, while *Typhlops* did not appear until p. 158, immediately before *Amphisbaena* in the Serpentia), and Fitzinger (1826) only recognised *Typhlops*. The summary of Boie's "*Erpétologie de Java*" by Schlegel (1827) similarly

only lists *Typhlops*, but includes the cryptic note "*Acontias lineatus* Reinw. ist von Boie nie unter *Acont*. gesetzt worden, wie es Hr. Fitz. anmerkt (column 291; *Acontias lineatus* Reinwardt was never placed under *Acontias* by Boie, as Mr. Fitzinger notes). We can find no reference to *Acontias* associated with Boie, and Fitzinger (1826:54) only mentions *Acontias lineatus* Reinwardt as a synonym of *Typhlops lineatus*, which name Fitzinger claims as his own.

Pieter van Oort's drawing (Fig. 11) still bears both names, *Acontias* and *Typhlops*, probably written by Schlegel himself, while in van Oort's list of drawings (NNM001001115) "*Acontias polygrammicus* Müll" seems to indicate that he must have considered Müller as describer. Müller's assignment of his *polygrammicus* to *Acontias* was immediately recognised as erroneous by Schlegel, who noted in his "*Essai*" (1837a part 1:242) that Müller had detected some spectacular reptiles, among them "un Acontias presque aveugle, un Typhlops à formes disparates" (242; an almost blind Acontias, a disparately shaped Typhlops).

Just a few years later, Schlegel provided the first significant revision of the genus *Typhlops* in his "*Abbildungen*"[23]. After addressing eight American, European, and African species he describes seven Asiatic ones, which he examined in the Paris and Leiden Museums. Six of the Asian species were collected by members of the First and Second Natuurkundige Commissies: *T. Diardii*, discovered by Diard in Cochinchina (historical exonym for parts of Vietnam), *T. Mülleri*, discovered by Müller on Java, *T. lineatus*, discovered by Reinwardt, and *T. ater*, observed in the interior of Java again by Müller, along with *T. polygrammicus* and *T. multilineatus*. He adds that the name *Typhlops polygrammicus* originates from "Müller, der die Art auf Timor entdeckte" (Schlegel 1839a:40; Müller, who discovered the species on Timor). At first glance, this seems to be contradictory. In Müller's handwritten description he specifies "Lobo" as location for his *polygrammicus* (see below), and in his "Catalog" (NNM001001423) as well as in the "Catalogus" shipment-list (NNM001001436_004) he gives New Guinea as the country of origin. However, Müller also records one specimen under "Reptilien van Timor" in his "Verzending M" shipment-list (NNM001001437_002; reptiles from Timor), and it is this that resolves the discrepancy. Schlegel assigned Müller's specimens from Timor and Lobo Bay to different species. Schlegel formally named the Timor species as *Typhlops polygrammicus*, while the specimen from Lobo Bay became one of the types of his *Typhlops multilineatus* (a second specimen is present in the Paris collection). The Lobo Bay specimen can no longer be identified in the Leiden collection (Brongersma 1934), while the specimen in Paris (MNHN RA.1067), collected by Quoy and Gaimard from Dorei, where they collected during the first *Astrolabe* expedition between 28 August and 6 September 1827 (Duyker 2014), has been incorrectly identified as the holotype (e.g., McDowell 1974; Wallach et al. 2014).

Indeed, assuming Schlegel's measurements are in centimetres, the lengths given for (0,35 + 0,02) *A. multilineatus* in his "*Abbildungen*" (0,35 + 0,02) would almost precisely cor-

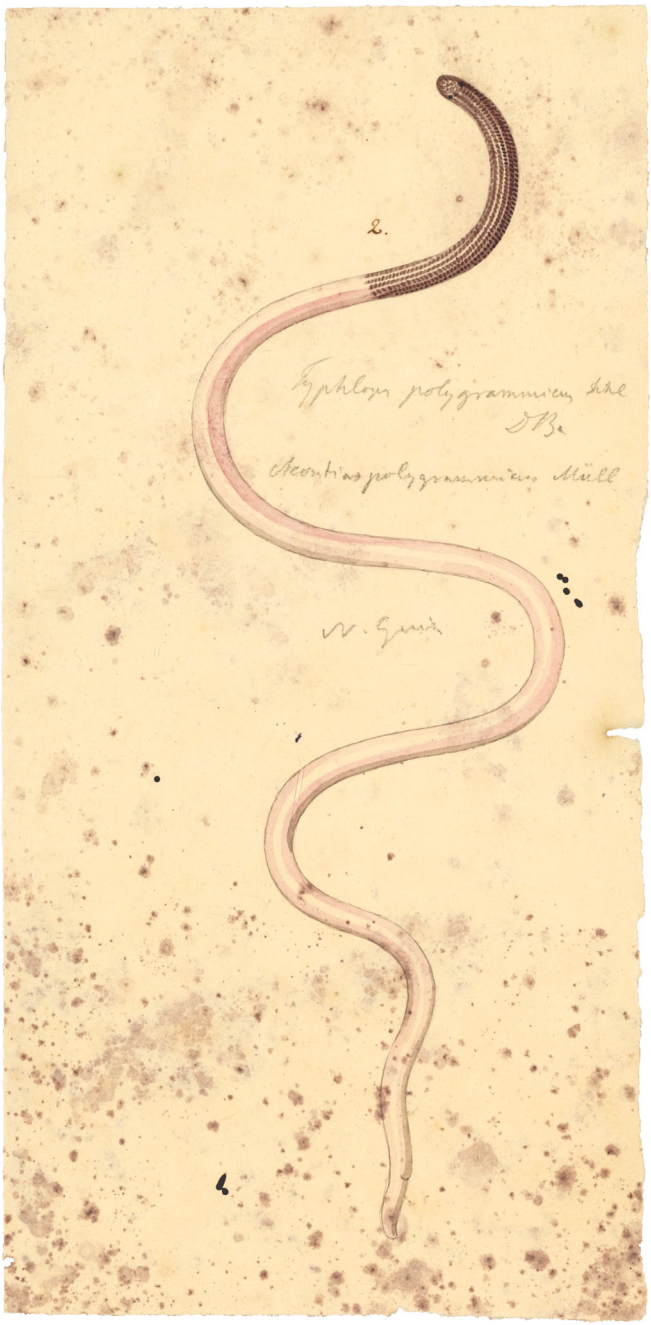

Fig. 11. The inscription, which was definitely added later, most probably by Schlegel, reads as follows: "*Typhlops polygrammicus* Schl[egel]. DB". And right underneath: "*Acontias polygrammicus* Müll", with the location given "N. Guin." (New Guinea) (NNM001000710).

A second quite parallel illustration (NNM001000637_002), not reproduced here, records, most likely from Müller's hand: "*Diese Figur 5 ist hier nur zum Teil fertig. Das übrige muß also vollendet werden; der Zeichner kann zugleich die Stellung des Hintertheiles verändern, wie es mit Bleistift angegeben ist. N. Guinée / B. Lobo"* (This figure 5 is only partially finished here. The rest must therefore be completed; the draftsman can at the same time change the position of the hindquarters, as indicated in pencil. N. Guinée B. / Lobo).

Müller's manuscript in transcription and English translation
(Gassó et al. 2020: NNM001001113_107)

Acontias polÿgrammicus Müll.

Lobo. August 1828.

Von dieser niedlichen Species erhielten wir nur ein einziges Exemplar.

Seine Länge beträgt 12″ 9‴ [= 345 mm]; *die Dicke des Körpers in der Mitte gemessen 2 ⅓‴* [= 5.3 mm]; Schz. [= Schwanz] *kurz nicht unterschieden mit stumpfer Spitze, auf welcher jedoch noch eine kleine Nadelspitzenähnliche Vorragung steht, im Ganzen* [= above the line] *lang 4 ¼‴* [= 9.6 mm], *Alle Schuppen des Körpers von gleicher Größe, klein, rundlich* [= above the line] *u. glatt. Kopf klein, garnicht unterschieden, Schnauze abgerundet* [= above the line], *etwas hervorspringend; Augen, klein rundlich. — Alle obern Theile sind auf grauröthlichem Grunde braunschwärzlich* [= above the line] *linirt; die untern Seite des Körpers hat eine ähnliche aber viel bläßere Zeichnung. —*

Of this cute species we received only one specimen.

Its length is 345 mm; the thickness of the body measured in the middle 5.3 mm; tail short not distinguished with blunt tip, on which is however a small needle-tip-like protuberance, in total long 9.6 mm. All scales of the body of the same size, small, roundish and smooth. Head small, not at all differentiated, snout rounded, somewhat protruding; eyes small, roundish. — All upper parts on grey-reddish ground brown-blackish lined; the lower side of the body has a similar but much paler pattern. —

respond to Müller's measurement of the Lobo *A. polygrammicus*: 12" 9‴ [= 34.5 cm] (see below).

In the New Guinea "Catalog" (NNM001001423) Müller lists one specimen of *Acontias polygrammicus* and *A. coecus* each. Schlegel corrects the names in pencil: in the first case "Typhl. multilineatus" and in the second "Acont. subcoecus".

Schlegel's concept of *Typhlops* has recently been revised in several studies, and his species *multilineatus* (Müller's *polygrammicus* from Lobo Bay) is now in the genus *Ramphotyphlops*, while Schlegel's *polygrammicus*, from Timor, is now in the genus *Sundatyphlops* (Pyron and Wallach 2014; Hedges et al. 2014), with the first name based on the Greek noun ραμφος (ramphos), meaning curved beak, and the second based on the Sunda archipelago, home of Schlegel's *polygrammicus*. In contrast to the following species, *A. coecus*, whose eyes are not "sichtbar" (visible), Müller refers to the existence of eyes here: "Augen, klein, rundlich" (eyes small, roundish).

The very short blunt tail terminating in a small thorn-like spine is a characteristic feature of typhlopid snakes. Müller's reference to dark lines along the upper surface of the body, also visible in van Oort's illustration when viewed with sufficient magnification, is the basis for Müller's name for the species: poly-grammicus = consisting of many lines (γραμμικός/grammikos). However, it is likely the presence of these longitudinal markings in both the Lobo Bay specimen and the Timor specimens led Müller to confuse two species, now placed in different typhlopid genera, as the same species. Schlegel's name, *multilineatus*, refers to the same feature.

DIBAMIDAE

Acontias coecus Cuvier
(*Typhlosaurus caecus* (Cuvier 1816 ["1817"]) = *Dibamus novaeguineae* Duméril and Bibron 1839)

Acontias coecus is the second species caught and described by Müller that he assigned to this genus, and also poses major problems in terms of taxonomic assignment. Müller refers in the heading of his text to Cuvier's first edition of his "*Règne Animal*", in which Cuvier pointed out various criteria that differentiated it from the subgenera *Ophisaurus* and *Anguis*: it no longer had a pelvis, sternum, scapula or clavicle (Cuvier 1816 ["1817"]:60). On the same page, after the species *Anguis meleagris*, a species described by Linnaeus with the type locality "Indiis" (in error), for which Cuvier—in error as well—gives the locality Guyana, and to which both Cuvier and Linnaeus refer an illustration in Seba (1735:II, XXI, I. (2)), he briefly mentions another, completely blind species from the Orient: *ac. cœcus*. Cuv.

Through Macklot's inventory of Boie's belongings (NNM001001400, see Jacobs and Shea 2022:52) we know that the members of the Commission had access to Cuvier's "*Thierreich*" in five volumes, i.e. the German translation of the "*Règne Animal*", in their book collection of about 240 volumes. The Commission also received in the bequest of van Hasselt a copy of Cuvier's original French edition (NNM001001213). The German translation would have been the 1821–1825 translation by Schinz of the first French edition, which removed the ligature from Cuvier's original name for the species, and spells it clearly as *coecus*. However, the Schinz German edition refers to *coecus* on p. 101, while it is the original French edition that refers to *cœcus* on p. 60, the page cited in the annotation

on Müller's description. We are unable to determine whether Müller was using the French edition while at Lobo Bay, or (as with *Acontias polygrammicus*), the bibliographic reference was added by Müller after the expedition returned to Europe.

Cuvier refers to *Acontias cœcus* again in the second volume of his opus maius thirteen years later when he correctly calls the Cape of Good Hope home of these "entièrement aveugle (*Ac. cœcus*, Cuv.)" skinks (Cuvier, second edition, 1829:70; completely blind). And, indeed, the Latin adjective "caecus"—"coecus" is a misspelling—means blind.[24] Cuvier's description, brief as it is, is sufficient to name the species, now known as *Typhlosaurus caecus*, and assigned to the Scincidae.

Quite obviously Cuvier's species cannot be identical with the one Müller found on New Guinea, where no blind or limbless skinks occur. Instead, Müller's specimens were the first collected representatives of a new family of lizards, the Dibamidae, with Duméril and Bibron (1839) describing the new genus and species *Dibamus Novae-Guineae*, using two of Müller's specimens that had been donated to Paris from the Leiden collection, where they bore the name *Acontias subcaecus* (Duméril and Bibron 1839:835).[25]

On this basis it has to be assumed that Müller erroneously adopted Cuvier's name *Acontias coecus*, probably misled by the general likeness of his own species to the only completely blind reptile previously reported, but later changed his mind, using the modified name *subcaecus* to indicate an affinity with Cuvier's species, but not identity with it.

While *Dibamus Novæ-Guineæ* was described as having "deux petits membres postérieurs" (Duméril and Bibron 1839:834; two small hind limbs) right under the tail, Müller did not mention limbs, and assigned his species to *Acontias*, a genus that was described as lacking any limbs. This character is sexually dimorphic in *Dibamus*, with the flap-like limbs only present in males (Greer 1985), so if Müller examined a female specimen for his description, the limbs would not have been present.

Quite evidently Müller considered *A. coecus* to be something different from his *A. polygrammicus*, although the first sentence in his description seems to imply some doubt: "*Für diese Art halte ich wenigstens ein Thier dieser Gattung*" (For this species I consider at least one animal of this genus). Does Müller here refer to the six specimens he mentioned in his "Catalogus" shipment-list of February 1831 "van Nieuw=Guinea" (NNM001001436_004), or the one specimen of *A. coecus* in the undated "Catalog" (NNM001001423_001)? Does he insinuate that he considers one to be *A. coecus* while he is not sure about the others?

We presume six specimens is correct, as six specimens attributable to the Commissie can be located. Two were sent to Paris prior to 1839, becoming the types of *Dibamus novaeguineae*. Four other Müller specimens still in Naturalis, Leiden (RMNH 3635–36, each number representing two specimens; Greer 1985) without any more precise locality than New Guinea, are likely to represent the other four specimens.

No image of this species is identified among the artwork from the Second Commissie in the online-archive, and van Oort does not list the species among list of drawings (NNM001001115).

Müller's manuscript in transcription and English translation

(Gassó et al. 2020: NNM001001113_108)

Neu=Guinea (B: Lobo)
Julÿ & August —
1828

Acontias coecus Cuv[ier].
Cuv[ier]. *Rég*[ne]. *anim*[al].*: II. pag. 60.*

Für diese Art halte ich wenigstens ein Thier dieser Gattung, welches man an dunklen, feuchten Stellen, im Urwalde von Lobo, nicht selten antrifft.

For this species I consider at least one animal of this genus, which is not seldom found in dark, damp places in the jungle of Lobo.

Im Verhältniß anderer Geschlechtsverwandten kurz und dick.

In relation to other genus-relatives short and thick.

Gz. Lg. [= Ganze Länge] *mit Schz.* [above the line, Schwanz] *6″ 5‴* [= 174 mm]*; Schz.* [= Schwanz] *kaum unterschieden, sehr stumpf u. 7 ½‴* [= 17.0 mm] *lang. Kopf hinten etwas dick aufgeworfen, aber nach vorne zu schnell dünner werdend; Schnauze stumpfspitzig; durchaus keine Augen sichbar; Schnauzenschild groß, in welchem die sehr kleinen rundlichen Nasenlöcher liegen; Schuppen klein, rundlich, glatt* [above the line] *und fast überall von gleicher Größe; nur an Kehle wenig kleiner u. unter der Schnauze mehr breitlich. Die Farbe des Rückens ist im Ganzen etwas dunkler als die der untern Theile; alle Schuppen sind in der Mitte gräulichbraun u. an den Rändern dunkler eingefaßt. —*

Whole length with tail 174 mm; tail hardly distinguished, very blunt and 17.0 mm long. Head somewhat thickly flared behind, but rapidly thinning towards the front; snout bluntly pointed; no eyes at all visible; snout shield large, in which the very small roundish nostrils lie; scales small, roundish, smooth and almost everywhere of the same size; only at the throat a little smaller and under the snout more broadish. The colour of the back is on the whole somewhat darker than that of the lower parts; all scales are greyish brown in the middle and darker fringed at the edges. —

AGAMIDAE

Calotes megapogon Müll. (= *Hypsilurus megapogon* (Duméril and Bibron 1837))

Only a few specimens of *Calotes megapogon* were available to Müller for his description and presumably (the drawing is not signed) to van Oort for his drawing.[26] In the probably earliest list ("Catalog", NNM001001423), made on New Guinea, two specimens are recorded, under the generic name "*Corythophanes*" (i.e., *Corytophanes*, the Neotropical helmeted basilisks of the family Corytophanidae, a generic name created by Boie for his "*Erpétologie de Java*" and published by Schlegel 1826). This was corrected by Müller who crossed out *Corythophanes* and replaced it with *Calotes*. In combination with Müller's introductory note in his manuscript description (below), this dates the otherwise undated "Catalog" as written, or at least commenced, prior to the description. In the later "Catalogus"-list of February 1831 (NNM001001436_003), written over two years after the return from New Guinea to Buitenzorg, only one specimen appears with the name "*Calotes megapogon*".

Müller added to the drawing (NNM001000690; Fig. 12) the title "*Calotes megapogon* Müll.", the location "Nova=Guinea (Lobo) 1828", and also, in pencil above the name: "sind ungemein groß [Membran? (illegible)], dann Zeichnung / undeutlich, olivengrün und braun variirt" (are immensely large [membrane? (illegible)], then pattern / indistinct, olive green and brown varied) and noted in the corner "ad vivum" (after life). This is clearly in reference to the dewlap, to which the epithet "megapogon" refers (from the Greek πώγων (pogon) = beard). Of two specimens in the Naturalis collection in Leiden noted in the register as collected by Müller and Macklot, RMNH.RENA.3049 better fits Muller's description and is likely to be the basis for the description, while RMNH.RENA.3048, with the distinctive pattern on its gular pouch, is the template which van Oort used for his drawing (Denzer and Dondorp 2023, fig. 2:35).

To Müller's handwritten description, Schlegel added later the species name "*Lophyrus* (!) *dilophus*" with a reference to the "*Erpétologie Générale*" by Duméril and Bibron (1837:419–421) and the statement that "mein Name melapogon [sic] [ist] ebenfalls erwähnt" (NNM001001113_062; my name melapogon [sic] [is] also mentioned). Duméril and Bibron list that name ("Synonymie. *Calotes megapogon*. Mus. de Leyde.") when describing *Lophyrus dilophus*, mentioning the name again at the end of their description: "Dans le musée de Leyde elle porte le nom de *Calotes megapogon*" (Duméril and Bibron 1837:421; In the Leiden Museum it bears the name *Calotes megapogon*). However, the specimen in Paris (MNHN-RA 2561) is called "*Lophyrus dilophus*. Nobis" by the two zoologists, and provides the basis for their description. Their description also includes a reference to "Planche 46, *Tiaris*"—this is a reference to the Atlas that accompanied their nine-volume work.

Duméril and Bibron (1837:421) explain that they originally intended to establish a new genus with this name, but later decided against it. This suggests that the illustration in question, using the name *Tiaris*, had already been printed, which would have made later changes difficult (Denzer and Manthey 2016). As the Atlas volume bears a publication year of 1854 on its cover page, this rather large time difference is surprising. However, as was often practised in those days, the plates were printed in advance and distributed a few at a time. In the case of the "*Erpétologie Générale*", the plates were issued in sets of 12 to accompany or precede the text volumes (Bour 2012).

This explains how Gray (1845:239) was able to use the name *Tiaris megapogon*, attributing the name to Schlegel (with *T. dilophus* in its synonymy) nine years before the atlas volume by Duméril and Bibron was completed and a title page issued, referring to both the text of *Lophyrus dilophus* and the plate with its illustration labelled *Tiaris dilophus*. Gray's description of both the ground colour "reddish brown, brown spotted" and the spiny crest "crest of the tail height like that of the back", however, refers to the Paris specimen of Duméril and Bibron, which Gray confirms by adding "(from the plate)", rather than Müller's specimens in Leiden, although he does refer to the one specimen in Paris and two in the Leiden Museum at the end of his description. Plate 46 was, according to Bour, published together with volume 3 in 1836, the year before the volume containing the text description was published, so that Gray certainly had access to this picture prior to compiling his "*Catalogue*" (Wolfgang Denzer, pers. comm., 4 April 2022).

Constant Duméril also lists both name variants in the later "*Catalogue Methodique*" of the Paris herpetological collection, published together with his son Auguste (Duméril and Duméril 1851) and also names the two naturalist-surgeons "Quoi et Gaimard" (Jean René Constant Quoy and Joseph Paul Gaimard) as collectors of the "Type" of *dilophus* (1851:92).

Schlegel (1839b:81) rejected the generic name *Lophyrus*, first created by Duméril (1805), and instead assigned "diese Thiere zu den *Galeoten*" (these animals to the *Galeotes*). The species he described in detail as *Galeotes lophyrus*[27], with synonyms *Agama gigantea* (Kuhl 1820) and *Lophyrus tigrinus* (Duméril and Bibron 1837) is today called *Gonocephalus chamaeleontinus* (Laurenti 1768).[28] Schlegel did not publish a name for Müller's species.

Schlegel's handwritten correction of Müller's name in this context suggests that he knew Duméril and Bibron's text but not the corresponding illustration, otherwise, we have to assume, he would not have made the erroneous correction of Müller's original name *Calotes megapogon* to Duméril and Bibron's *dilophus* (now *Lophosaurus dilophus*, fide Denzer and Manthey 2016).

In the wider geographical area of New Guinea, 15 *Hypsilurus* species are recognised (Denzer and Manthey 2016:103; Denzer et al. 2020; Denzer and Dondorp 2023).

Fig. 12. *Calotes megapogon* Müll. (NNM001000690). Although the sheet is not signed, we may assume that van Oort was the artist. On the rear of the drawing the name *Bronchocela cristatella* is inscribed, although this identification is incorrect. The connection between the New Guinea agamid and latter species, a quite different looking lizard described by Kuhl in 1820, with a wide geographic range in Southeast Asia that excludes New Guinea, is not explained.

For many years, the species named *Calotes megapogon* by Müller and illustrated by van Oort was known as *Hypsilurus auritus*, first described by Meyer (1874). Meyer compared his species with a second new species he described, *Hypsilurus binotatus* sp. n. from the island of Jobi, which is "viel kleiner", while the species from New Guinea has "je ein schwarzer Fleck, welcher das Ohr mit einschliesst" on the sides of the head (Meyer 1874: 130, much smaller; one black spot each, which includes the ear). This spot, "bordered by a reddish-brown streak", is also referred to by de Rooij: it "extends to below the eye; sometimes the black spot is broken up into smaller ones" (de Rooij 1915:115), and can also be seen in van Oort's drawing.

In two recent papers the nomenclature of this species has been re-evaluated. Firstly, Denzer et al. (2020) reassessed the identity of a species described by Duméril and Duméril (1851) as *Lophyrus spinosus* from the Philippines, which Denzer et al. reidentified as a *Hypsilurus* species similar to *H. auritus*. From the route of the French voyage on which it was collected, the expedition of the ships *L'Astrolabe* and *La Zélée* commanded by Dumont d'Urville, they proposed that the correct locality for the holotype of *spinosus* was the site of Fort du Bus in Lobo Bay, a locality visited by that expedition in April 1839 long after the departure of the Natuurkundige Commissie from that settlement. Secondly, Denzer and Dondorp (2023) noted that the name *Calotes megapogon* as published by Duméril and Bibron (1837) was not initially an available name in zoological nomenclature because it had been published as a synonym of *Lophyrus dilophus.* Instead, the use of the name *Tiaris megapogon* by Gray (1845), citing the first appearance of the name by Duméril and Bibron (1837), validated that nomenclature. Further, they considered that all three names, *Tiaris megapogon*, *Lophyrus spinosus* and *Hypsilutus auratus,* applied to the same species, and hence restored the long-overlooked name *megapogon* to that species. Thus, in *Hypsilurus megapogon*, we have one of the few species epithets coined by Müller that remains applied to the same species at the present time, though one which has only recently been restored.

Müller's manuscript in transcription and English translation

(Gassó et al. 2020: NNM001001113_062)

Calotes megapogon Müll. *Neu-Guinea (Baÿ Lobo) August 1828*

[added above the name, different hand] *Lophyrus (!) dilophus Dum. & Bibr. durch Quoy & Gaim*[ard]*. von N. Guinea. In der Erp.génér. 4 p. 419 mein Name melapogon [sic!] ebenfalls erwähnt. — Pl. 46, Tiaris.*

Ich habe diese Species früher auf N: Guinea durch Verwechslung der Geschlechtsnamen fälschlich zur Gattung Corytophanes *Boie gestellt. —*
Gz. Lg. [= Ganze Länge] *v. der Schnauzenspitze bis zum After 5″ 2‴* [= 181 mm], *Schwz.* [= Schwanz] *1′ 3″ 8‴* [= 424 mm] *Kopf lang 1″ 3 ½‴* [= 35 mm] *hinten breit 8 ½‴* [= 19 mm] *hoch über der Stirn 8‴* [= 1.8 cm] *Totalform im Wesentlichen ganz wie Cal. gutturosa. Kopf rundlich, oval mit stumpfer Schnauze, doch von der Seite gesehen von der Stirn herab stark abschüssig; Augen mittelmäßig; mit kantigen Supracilien, welche dunkel, fast schwärz* [lich, = above the line] *bis zu der Schnauze herab zieht; die kleinen runden Nasenlöcher liegen unter dieser feinsten u. nur 2‴* [= 4.5 mm] *von der Schnauzenspitze entfernt. Augenlieder mit kleinen körnigen Schüppchen bedeckt; oberes u. unteres Rüßelschild kurz aber breit; an jeder Seite u. jeder Kinnlade 9 Lippenschilder. — Kamm im Nacken weniger hoch als beÿ gutturosa, aber ganz auf dieselbe Art gebildet, u. sich auch wie beÿ dieser Art allmählich in der Schnz.* [Schnauze] *verlierend. Kehlsack sehr groß, lang 1″ 3 ½‴* [= 35 mm] *breit (an seiner Basis gemessen) 1″ 10‴* [= 77 mm]. *Die Schuppen des Kopfes, Rückens u. der Basis des Schwzs.* [= Schwanzes] *sind äußerst klein u. carinirt* [= keeled]*, wodurch sie ein grobkörniges Ansehen erhalten; auf den Extremitäten der obern Seite des Schwz.* [= Schwanzes, above the line] *dem ganzen unteren Theil des Körpers mit Ausnahme des Kehlsackes* [crossed out]. *Die Schuppen etwas größer aber ebenfalls stark carinirt* [= keeled]*; auf der unteren Seite des Schzs.* [= Schwanzes] *sind jedoch die Schuppen doppelt so groß als auf dem Bauch u. ihre großen Kiele bilden daselbst mehrere Längsstreifen. Kehlsack wie der ganze Hals grobkörnig geschuppt. Kopf, Rücken u. außen Seite der Extremitäten frisch grasgrün; auf dem Rücken u. den Extremitäten mehrere undeutliche bläuliche Querstreifen u. unterer noch*
_063
schwärzlich marmorirt; auch auf dem Kopf bemerkt man schwarze Punkte u. rosröthliche Schattirungen; Hals bläulichgrün, mit mehreren von der Nackenleiste schräg nach vorne zu laufende gelbliche Streifen; ein ähnlich gefärbter Streif zieht sich auch unter dem Aug hin, hinter dem ziemlich großes Tÿmpanum herum; Kehlsack blaß kornblumenblau mit schwarz gefleckter Schattirung; die Grundfarbe der Basishälfte des Schzs. [= Schwanzes] *ist bei einem stark* [above the line] *bläulichen Anstrich braunlichgrau, u. vorne röthlich graubraun; doch über den ganzen Schz.* [= Schwanz] *zeigen sich 7 breite* [above the line] *schwarze Ringe, die von der Basis nach der Spitze des Schzs.* [= Schwanzes] *zu an Breite allmählich* [above the line] *zunehmen; Unterleib braulich grün, aber auch grasgrün, nach Willkühr des Thiers.*

Einzeln im hohen Wald von Lobo. Die Inländer nennen diesen Calotes Bessabasa.

I previously placed this species incorrectly in the genus *Corytophanes* Boie on N: Guinea by confusing the genus names. —
Whole length from tip of snout to cloaca 181 mm, tail 424 mm, head length 35 mm, breadth behind 19 mm, height above forehead 18 mm, total form essentially quite like *Cal. gutturosa*. Head roundish, oval with blunt muzzle, but seen from the side strongly sloping down from the forehead; eyes medium; with angular supraciliaries, which are dark, almost blackish, descending to the muzzle; the small round nostrils lie below this finest and only 4.5 mm from the tip of the muzzle. Eyelids covered with small granular scales; upper and lower rostral shields short but broad; on each side and on each jaw 9 labialia. — The nape of the neck may be less high than that of *gutturosa*, but formed in the same way, and gradually fading in the snout. Dewlap very large, length 35 mm, width at its base 77 mm. The scales of the head, back and base of the tail are extremely small and keeled, giving them a coarse-grained appearance; on the extremities of the upper side of the tail, the entire lower part of the body with the exception of the dewlap. The scales somewhat larger but also strongly keeled; on the lower side of the tail, however, the scales are twice as large as on the belly and their large keels form several longitudinal stripes there. Dewlap, like the whole neck, with coarse scales. Head, back and outer side of the extremities fresh grass-green; on the back and the extremities several indistinct bluish transverse stripes and lower, still blackish marbled; also on the head one notices black dots and rust reddish shades; neck bluish-green, with several stripes running from the nape of the neck diagonally towards the front; a similarly coloured stripe is also visible under the eye, rearwards a rather large tympanum; throat pouch pale cornflower-blue with black spotted shading; the basic colour of the base half of the tail is brownish-grey with a strong bluish tinge and reddish-greyish-brown in front. However, over the whole tail there are 7 broad black rings, which increase in width from the base towards the tip of the tail. Abdomen brownish green, but also grass-green, at the discretion of the animal.

Solitary in the high woods of Lobo. The locals call this *Calotes* Bessabasa.

When Müller uses "Cal. gutturosa" as a comparison in his description, it is not certain to which specimens exactly he is referring, although he was aware of a species identified by that name, as the name *gutturosus* appears does elsewhere in Müller's manuscripts. Concerning "*Calotes gutturosus & cristatellus*" from Java, Müller not only observes that "des Nachts lässt es einige pfeifende Töne hören" but points out that the "welkührliche Färbveränderung der Caloten (…) bereits hinreichend bekannt [sei]" (NNM001001113_061, at night it lets out some whistling sounds; the arbitrary change in the colour of the *Calotes* is already sufficiently known). He claims that they can change their colour but only from their generally "graues Kleid, das bei der Gefangennehmung zugleich in ein etwas schmutziges Braunes übergeht" (grey dress, which immediately changes to a somewhat dirty brown when captured).

The name gutturosa does not appear in any of the transport lists, but it does appear in the list of 1826 compiled by Schlegel after that shipment's arrival in Leiden; there, the only specimen is listed immediately below the name "Calotes cristatella" (NNM001001048) attributed to Kuhl, a species that he had described in 1820 as "*Agama cristatella* mihi".[29] Van Oort does not mention either species in his list of drawings (NNM001001115).

We know that Müller and his colleagues had not only prepared themselves very well for this expedition, but that they had seen all of Kuhl's and van Hasselt's documents and notes handed over by van Raalten (see Jacobs and Shea 2022:52). Most certainly the group also had with them at least the illustrations from Boie's "*Erpétologie de Java*", where the name *gutturosa* appears on plate XI (Naturalis, Leiden, archive) attributed to Merrem, the illustration drawn by Antoine Maurevert.[30] The species had first been described by Merrem (1819), based on two illustrations from Seba (1734), but it is more likely that Boie would have been more familiar with the redescription by Merrem (1820), where the species stated as being from "America meridionali et in Mexico?" (South America and Mexico) indicating Merrem's doubt with regard to the distribution given by Seba with a question mark. The name *Agama gutturosa* Merrem is now considered either a synonym of Kuhl's *Agama cristatella* (Figueroa 2021) or a senior synonym of Duméril and Bibron's (1837) *Bronchocela jubata* (Denzer and Tillack 2024), both species occurring in Java. We may assume from Müller's notes from Java (above) that he had become familiar with these species during the nineteen months that the Commissie spent on Java before he landed on New Guinea (Wolfgang Denzer, pers. comm., 5 April 2022), or that he had seen *B. cristatella* on Ambon, during the three weeks that the expedition spent there before leaving for New Guinea. According to one shipment-list, the "Catalogus" (NNM001001436_004) of February 1831, 20 specimens of *Agama cristatella* (now *Bronchocela cristatella*) had been acquired on Amboine, The second shipment-list of February 1831, the "Verzending M" (NNM001001437_002) documents 16 *Calotes cristatella* Kuhl "van Amboina". At the moment, neither the relationship between the two lists nor why Müller used two different generic names can be clarified.

VARANIDAE

Varanus prasinus Müll. (= *Varanus prasinus* Schlegel 1839b)

In Müller's handwritten notes, the genus *Varanus* is rarely mentioned; apart from *V. prasinus*, only *V. bivittatus* Kuhl (now *Varanus salvator bivittatus* Kuhl 1820), of which one specimen was caught on Java, is described to some extent (NNM001001113_119–120). Of a third species, *V. elegans* Merr. (now *V. salvator salvator* (Laurenti 1768), although specimens from Timor, Samao and Ambon would now be *V. timorensis* Gray 1831 and *V. indicus* Daudin 1802; Kaiser et al. 2011; Weijola 2015), four specimens were shipped to Leiden, one each from Timor and Amboina and two in a "blikken doozen" (tin box) from "Timor en Samao" (NNM001001437_002). Neither description nor drawing of these could be found. Van Oort did not enter either name in his list of drawings (NNM001001115); the only monitor that appears is *V. prasinus* (Fig. 13).

In Schlegel's description (1839b:78–79) the origin is described as "West-Küste Neu-Guinea's" (West coast of New Guinea), but Müller's name priority is not mentioned.

Since this species has already been studied in detail in a separate paper (Jacobs and Koch 2021), we limit ourselves here to a reference to that work.

GEKKONIDAE

Hemidactylus baliatus Müll. (= *Gehyra serraticauda* Skipwith and Oliver 2014)

The first of two gecko species reported in Müller's manuscripts from Lobo Bay is a species he named *Hemidactylus baliatus*, comparing it with *Hemidactylus frenatus*, a species first collected on Java that had been named by Kuhl and van Hasselt, and also later by Boie. Their manuscript descriptions of *H. frenatus* were never published, though the name was listed by Schlegel (1826:235, 1827:column 290,) in his summaries of Boie's "*Erpétologie de Java*", the latter stating "*H. frenatus* K. und v. H. n. sp. [Kuhl and van Hasselt n. sp.]" among the 7 species of *Hemidactylus* that the museum [Leiden] had in its possession. His references to *H. frenatus* must be regarded as nomina nuda, as they lack any concrete detail.

A decade later Duméril and Bibron (1836) formally described *Hemidactylus frenatus* from numerous specimens (including some from the Naturalis collection from Leiden sent on exchange to Paris). They attributed the name to Schlegel rather than Boie, and emphasised that their epithet, from the Latin "frenum" (rein or bridle), was the one under which the species had been sent to Paris (Duméril and Bibron 1836:366).

Fig. 13. *Varanus prasinus*. Van Oort's drawing (NNM001000670) constitutes the earliest image of this species, which was produced on site with the freshly caught specimen in hand. By adding the name "Var. prasinus Müll n. sp.", which stemmed from "N. Guinea B. Lobo" and was drawn by "v. Oort del.", Müller claimed this species for himself as the first describer.

Van Oort lists a drawing under the name "*Hemidactÿlus frenatus* Boie" immediately after "*Hemidactÿlus baliatus* Müller" (NNM001001115_001). "*Hemidactÿlus fraenatus*", together with "*Gonÿodactÿlus marmoratus*", was also drawn by van Oort on plate IX in preparation for Boie's "*Erpétologie de Java*" (Naturalis, Leiden, archive) each in a dorsal and a ventral view, while the transport list from February 1831 mentions "Hemidactÿlus fraenatus Müll." with 19 specimens from Amboina (see also Fig. 14). Müller's unpublished, handwritten description of the species (NNM001001113_136), called "Tjaktjak" in the natives' vernacular, however, gives "Java and Sumatra" as the locality, while Schlegel's addition to that manuscript "(wahrscheinlich durch Schiffe angebracht)" (probably brought by ships) mentions among others Ceylon, Madagascar, Amboina, Java, Timor, Marianas, Bengal. As we have noted previously, Boie's descriptions of *H. fraenatus* and *G. marmoratus*, which obviously refer to two different species, must have been known to Müller, which explains Müller's addition to the species name "*Hemidactÿlus frenatus* Boie".

Obviously with Müller's notes before him, Schlegel provided a short handwritten, unpublished description of "H. baliatus n. sp.", again comparing the species with *Hemidactylus frenatus* for comparison (NNM001001387_014), even though the species is half again larger in size than *H. frenatus*. Schlegel mentions as well the "doigts élongés à toute le longeur et a lames sous digitales en chevron" (full-length elongated fingers with chevron-shaped subdigital lamellae). Müller highlights more precisely "Nägel klein aber scharf; Daumen nagellos" (NNM001001113_132, see below; nails small but sharp; the thumbs nailless). Constant and Auguste Duméril underline this aspect as well when they indicate that their species *Hemidactylus baliolus* belongs to the "dactylopères ou à pouces sans ongles" (Duméril and Duméril 1851:38, dactyloperus with nailless thumbs).

Apparently, Müller succeeded in obtaining only three specimens of *Hemidactylus baliatus* on New Guinea; at least the shipment-lists ("Verzending M", February 1831; NNM001001437_002 and undated "Catalog", NNM001001423) refer to this number. In the "Catalogus" list of February 1831 the species is not mentioned.

Müller's manuscript in transcription and English translation

(Gassó et al. 2020: (NNM001001113_132)

Neu=Guinea (Lobo)
August 1828

Hemidactÿlus baliatus Müll.

Länge des Körpers von der Nasenspitze bis zum After 3″4‴ [= 90 mm]; *Länge des Schzs.* [= Schwanzes] *2″ 6 ⅔‴* [= 69 mm], *breit an der Basis 4 ¼‴* [= 9.6 mm], *hoch daselbst 2 ⅔‴* [= 6.0 mm]; *Kopf lang* 10 ½‴ [= 24 mm] *hinten breit 7 ¼‴* [= 16 mm], *hoch über der Stirn 2 ½‴* [= 5.6 mm]. —

Form im allgemeinen wie bey H. fraenatus Boie. y. — Kopf länglich oval, deprimirt; Occiput flach, aber von der Stirn nach der Schnauzenspitze zu abschüssig; Augen groß, stark hervorstehend mit verticularer Pupille u. ochergelblicher Iris, die schwärzlich besprengt ist: Nasenlöcher klein, rundlich, vorne ans Rüßelschild stoßend, u. oben durch ein kleines Schildchen begrenzt. Schwanz unterschieden breit, deprimirt scharfkantig. Füße kurz, plump; Zehen stark erweitert; Nägel klein aber scharf; Daumen nagellos. Oberkinnlaude mit 12–14 Randschildern an jeder Seite und einem breiten scutum rostrale besetzt; an der Unterkinnlade stehen auf jeder Seite 8–9 Randschilder an; ein Lippenschild u. hinter diesen am Kinn noch 6 kleinere Schildchen. Alle oberen Theile des Körpers wie auch die Kehle sind mit klein

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körnigen Schuppen dicht besetzt; die Schuppen auf der Brust u. dem Bauche sind ein wenig größer, flacher u. rundlich; untere Seite des Schwz. [= Schwanzes] *mit kurzen* [crossed out] *breiten Schildern bedeckt. 34–38 Schenkelöffnungen*[31]. *— Die Grundfarbe der oberen Theile ist auf graubräunlichem Grunde stark dunkel olivengrün überlaufen u. allenthalben rostroth oder auch braunroth punktirt u. gefleckt marmorirt; auf dem Kopfe stehen mehrere gleichgefärbte unterbrochene Längststreifen; u. auf dem Rücken u. Extremitäten bemerkt man noch einzelne kleine hellere Flecken; alle untern Theile des Körpers schmutzig bräunlichgelb. —*

nb. [different hand, different pen, subsequently inserted, likely by Schlegel] *Vielleicht gehört zu dieser Art Hemid*[actylus]. *variegatus Du. & Bibr. (Erp. génér. T. 3 p. 353) von N*[eu]. *Holland.*

Die Einwohner von Lobo nannten diesen Gecko Wama=Kutu.

Length of body from tip of nose to cloaca 90 mm; length of tail 69 mm, breadth at the base 96 mm, height there 6.0 mm; head length 24 mm breadth behind 16 mm, height above the forehead 56 mm. —

Shape generally as in *H. fraenatus* Boie y. — Head elongated oval, depressed; occiput flat, but sloping from forehead to tip of snout; eyes large, strongly protruding with vertical pupil and ochre-yellowish iris, which is blackish sprinkled: nostrils small, roundish, abutting the rostral shield in front, and bordered above by a small shield. Tail distinct, broad, depressed, sharp-edged. Feet short, clumsy; toes strongly expanded; nails small but sharp; the thumb nailless. Upper jaw with 12–14 labial scales on each side and set with a broad rostral; on the lower jaw there are 8–9 labial shields on each side; a mental shield and behind these on the chin 6 smaller shields. All upper parts of the body as well as the throat are densely covered with small granular scales; the scales on the chest and abdomen are a little larger, flatter and roundish; lower side of the tail covered with short, broad scales. 34–38 thigh-openings[31]. — The ground colour of the upper parts is strongly overlaid with dark olive-green on a grey-brownish ground, and everywhere rust-red or brown-red grounded and mottled; on the head there are several interrupted longitudinal stripes of the same colour; and on the back and extremities one notices individual small lighter spots; all lower parts of the body dirty brownish-yellow. –

nb. [different hand, different pen, subsequently inserted, likely by Schlegel] Perhaps this species includes Hemid. variegatus Du. & Bibr. (Erp. génér. T. 3 p. 353) from N[eu]. Holland.

The inhabitants of Lobo called this gecko Wama=Kutu.

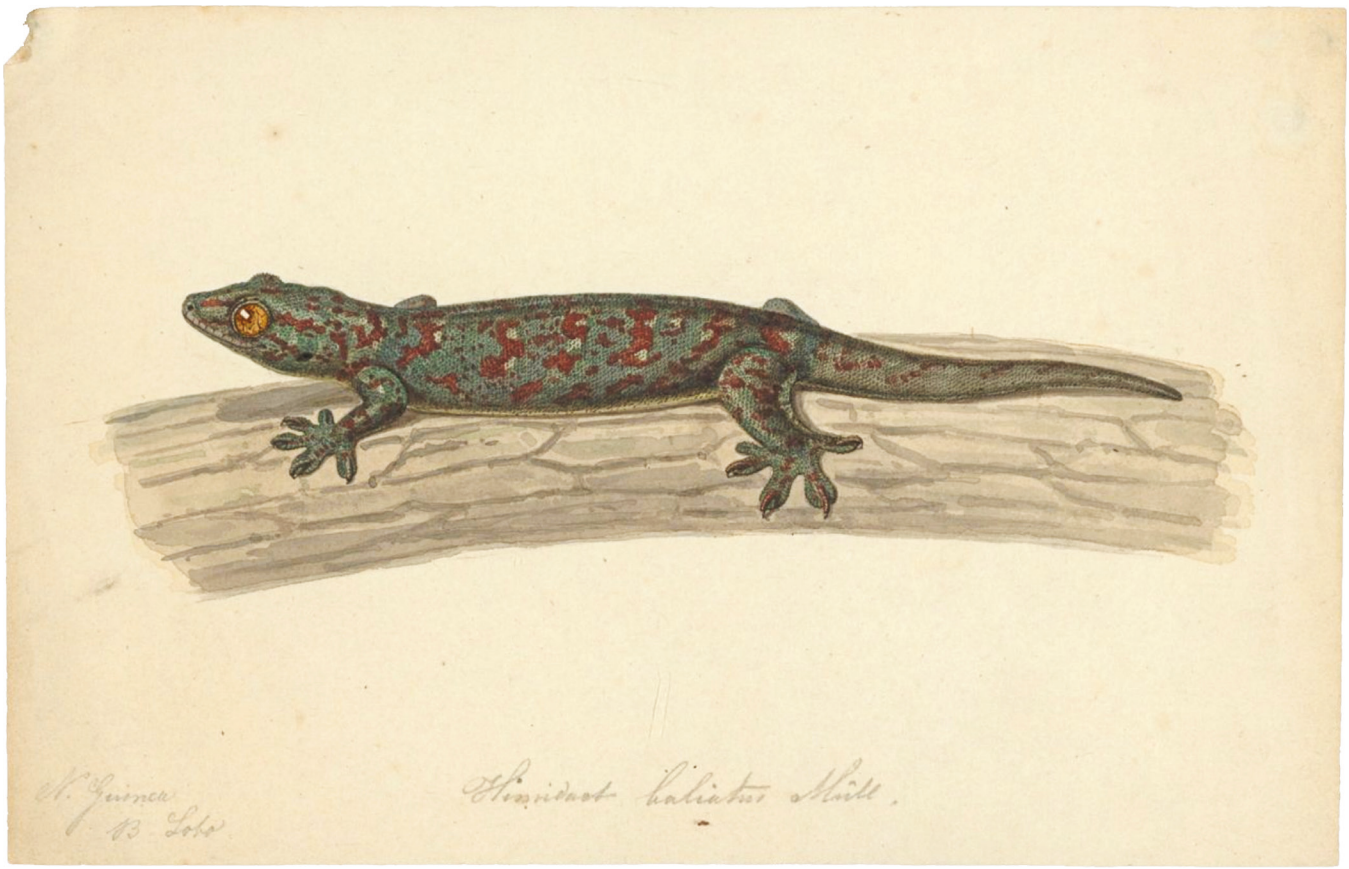

Fig. 14. The caption of the drawing reads: "*Hemidact*[ylus]. *baliatus* Müll. N. Guinea B. Lobo" (NNM001000609). Although the online-archive calls the "Author: Unknown" we may presume that the artist was again Pieter van Oort, due to the similarity in style with his other lizard paintings, even though the caption most probably stems from Schlegel again.

Several "gleichgefärbte unterbrochene Längststreifen" (interrupted longitudinal stripes), as mentioned by Müller, in a rusty red are found on the drawing most distinctively right behind the eyes. This "ligne assez large" extends in "taches confluentes" along the sides of the body (fairly broad line, in confluent spots).

Surprisingly, this gecko, according to Müller, has the same name in vernacular as a village near Lobo (see above NNM001001113_144). Schlegel's nota-bene addition with its reference to Duméril and Bibron's "*Érpetologie générale*" insinuates a relationship with a species that those authors ascribed to the west coast of Australia (Baie des Chiens Marins, Shark Bay, about 800 km north of today's Perth), "N[eu]. Holland." in Schlegel's terms. Müller himself assumed kinship with *H. fraenatus* Boie, which we also find in van Oort's list with its correct spelling without the "a".

The clawless first digit, and the broad subdigital lamellae with a central notch, along with the illustration by van Oort, indicate that the species named by Müller as *H. baliatus* is not a *Hemidactylus*, but belongs to *Gehyra*, a genus that was not named until John Gray in London created it for a species from Pacific Oceania (Gray 1834b). *Gehyra* is an extremely speciose genus, with nearly 70 species, many of which are primarily distinguished genetically, with only very limited morphological differences. On current taxonomy, the species collected by Müller is most likely *Gehyra serraticauda*, a species only recently described by Skipwith and Oliver (2014) from a single specimen from Fak Fak. Their description assigns to the same species a specimen photographed from Triton Bay in 2010 that closely resembles van Oort's illustration. However, Müller's name *baliatus*, presumably from the Greek βαλιος (balios), marbled, alluding to the irregular dorsal patterning, raises a possible taxonomic complication. Duméril and Duméril (1851) named a gecko *Hemidactylus baliolus*, stating (Duméril 1856) their name was derived from a Latin word stemming from Plautus, and meaning red and spotted, basing their description on a single specimen in the Paris collection without any locality other than New Guinea and without any indication of a collector. That name, as *baliola,* has since been assigned to a *Gehyra* species from the Western and Central Provinces of southern Papua New Guinea, distant from Lobo Bay (King et al. 1989). The similarity between Müller's name *baliatus* and Duméril and Duméril's *baliolus* raises the possibility that the type of *baliolus* instead may have been a specimen obtained from the Leiden collection bearing a label with Müller's name on it, the label and association with Leiden subsequently lost, with Duméril and Duméril using a modification of that name.

The Paris collection includes a number of Müller specimens obtained from Leiden, and there have been other occasions when slight misspellings of Müller names were listed in other Duméril publications, for example the listing of Müller's *Scincus erythrolaimus* as *Scincus erythrolamus* by Duméril and Bibron (1839), as noted by Jacobs and Shea (2022). *Gehyra serraticauda* and *Gehyra baliola* are very similar species, attaining similar sizes, with similar mottled red colour patterns, and both with a deeply notched rostral scale, partially divided subdigital lamellae, and a skin fold along the posterior margin of the hind limb. The primary difference between them is the more flattened tail of *G. serraticauda*, bearing a pronounced serration along the ventrolateral margins due to projecting scales (Skipwith and Oliver 2014). However, *G. baliola*, as presently defined, has some flattening of the tail and a non-spinose ridge along the sides of the tail (King et al. 1987). Although a spinose fringe was not mentioned by Duméril and Duméril in describing *baliolus*, the subsequent illustration of the type specimen by Duméril (1856, pl. xxvii, here reproduced as Fig. 15) does appear to show some development of a spinose fringe along the tail in their specimen, of a similar degree of development to the photograph of the specimen from Triton Bay reproduced by Skipwith and Oliver (2014), although the latter individual has the distal part of the tail regenerated, so that the spinose fringe is only visible at the tail base.

Careful re-examination of the holotype of *Hemidactylus baliolus* in Paris is needed to determine whether it is conspecific with the species to which the name has subsequently been applied, or whether it represents the same species as *Gehyra serraticauda*.

Gonyodactylus Boiei Müll. (= *Cyrtodactylus novaeguineae* (Schlegel 1844))

Although a *Gonidactylus Boiei* Mull. (van Oort omits the German umlaut quite often) is recorded in van Oort's list of drawings (NNM001001115), the drawing itself cannot be found in the online-archive. It could well be that Schlegel's illustration of *Gymnodactylus marmoratus var. Novae Guineae* (Fig. 16) derives from van Oort's drawing, however, as Müller's description closely matches the published artwork.

It is not only with regard to the epithet that uncertainties prevail; several variant spellings of the genus name also exist. Heinrich Kuhl, working with Johan Conraad van Hasselt, used both "Gonyodactylus" and "Gonydactylus". The former spelling is found in his handwritten notes both on the cover page "*Gonyodactylus* Nobis Kniefingerer", "Genus ex Geckonum", (NNM001001036_201) and on the following page where he describes "*Gonyodactylus fasciatus* Nobis. "Wir erhielten ihn bei Buitenzorg, wo er sehr selten seyn muss. Tjihanjavas u. Aloun Aloun sehr gemein, gehört also den höheren Gegenden an, da er bei Buitenzorg sehr selten ist" (NNM001001036_202; We got it at Buitenzorg,

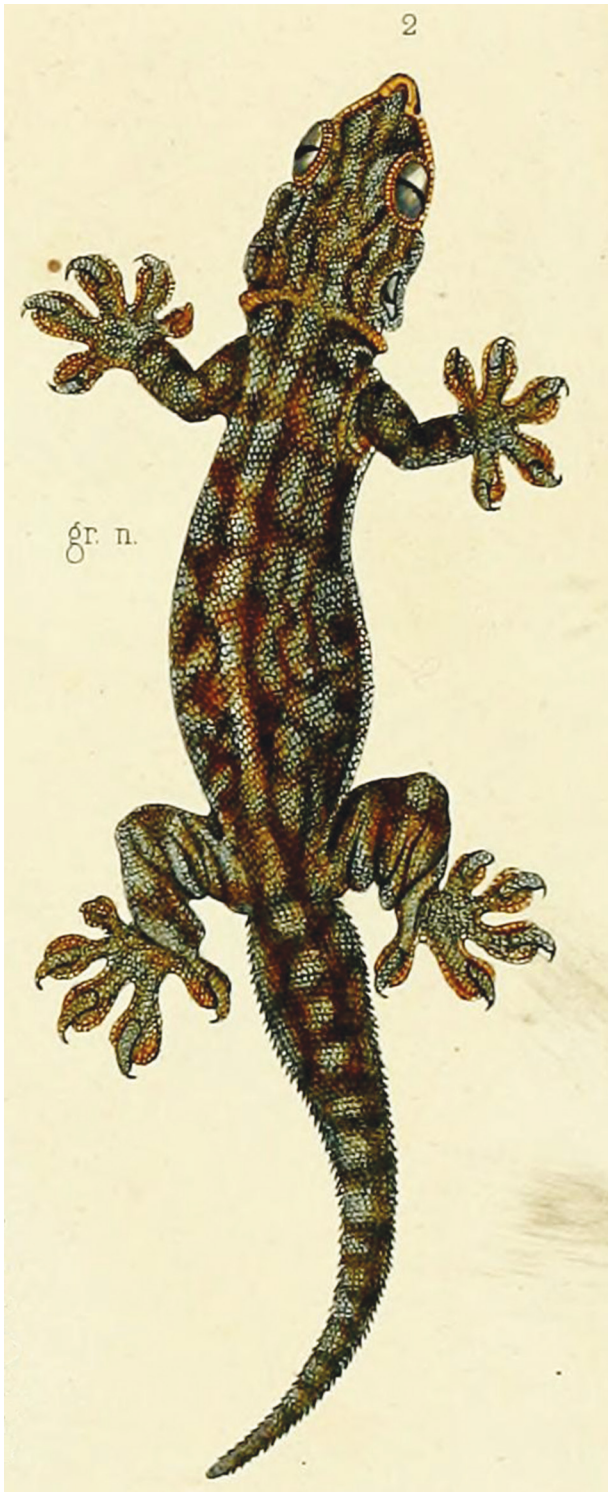

Fig. 15. *Gehyra baliola* from Duméril (1856, pl. xvii), which Duméril called "Hemidactyle taches-rousses" (red-spotted Hemidactylus) in his caption. There are differences between the drawings in Figs. 14 and 15, not only in the form of the body and tail, but the pattern as well. However, as Müller collected three individuals, it is possible that the two illustrations are of different specimens from the same locality. It is also possible that the highly stylised illustration by Duméril is not an accurate reproduction of the lizard. Image: Biodiversity Heritage Library.

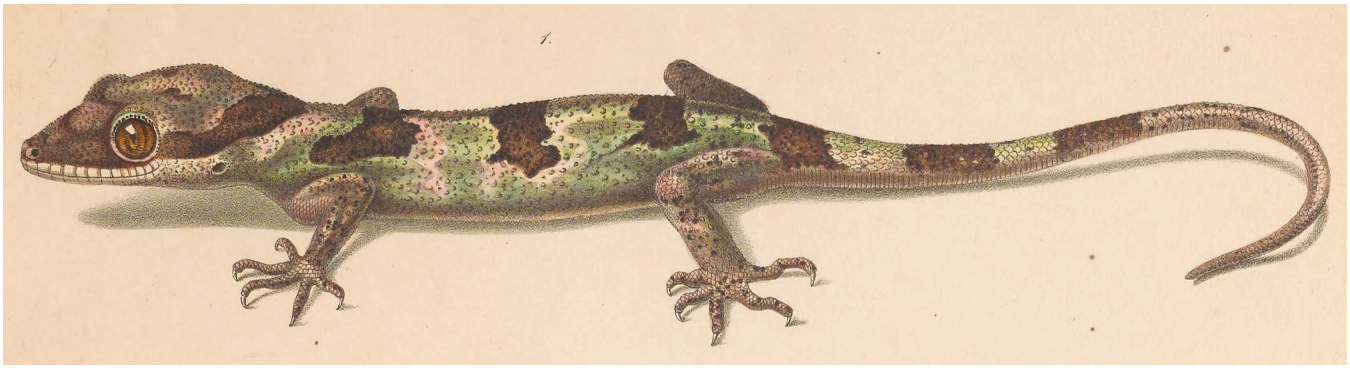

Fig. 16. Illustration of *Gymnodactylus marmoratus* var. *Novae Guineae*, as published by Schlegel (1837b:Plate 2). This illustration is likely to be based on the now-missing painting of *Gonyodactylus Boiei* Müll. by van Oort; the colour features correspond exactly to those described by Müller in his handwritten text, reproduced below.

where it must be very rare. Tjihanjavas u. Aloun Aloun very common, thus belongs to the higher regions, as it is very rare at Buitenzorg).

In a published passage, from "Tjchorjavor am Fuße des Pangerango, d. 18. Juli 1821" (Tjchorjavor at the foot of the Pangerango, July 18, 1821), however, the two use a slightly different spelling: "Ein neues Thier gab uns Gelegenheit ein neues Untergenus — *Gonydactylus* zu bilden (griech., Knie) welches den *Phyllouren* Cuv. am nächsten steht, aber durch Bildung seines Schwanzes sehr abweicht" (Kuhl and van Hasselt 1822b:475; A new animal gave us the opportunity to form a new subgenus — Gonydactylus (Greek, knee) which is closest to the *Phyllouren* Cuv. but differs greatly in the formation of its tail). However, this use of the generic name is a nomen nudum (Mees 1987:137), insofar as no species was included in it and thus *Tarentola* Gray 1825 and *Cyrtodactylus* Gray 1827, published just a few years later, remain valid. According to Mees, "the first validation of *Gonydactylus*" with assigned species was found in Schlegel: "Nouveau Genre: Goniodactylus Kuhl. Espèces: *G. marmoratus* Kuhl. N. esp. — Et *Ascalabotes stenodactylus* Licht." (Schlegel 1826:235; repeated with slightly different wording in 1827:column 290; new genus), and with only *stenodactylus* as an available species name at that time, *Goniodactylus* becomes a junior synonym of *Tarentola* Gray 1825, while the generic name for the south-east Asian species seen by the Commissie members becomes *Cyrtodactylus* Gray 1827.

In the same year, 1826, Schlegel recorded the receipt of one specimen of *Gonyodactylus marmoratus* R[einwardt]. in a transport-list he drew up himself (NNM001001048_001).

This attribution to Reinwardt is surprising, as Müller uses that species as a comparative reference in the text transcribed below but attaches Boie's name as the author for it. On plate IX intended for Boie's "*Erpétologie de Java*" there are two illustrations under the name "Gonÿodactÿlus marmoratus" (Naturalis Leiden, archive). Another illustration (NNM001000699) bears the name *Gymnodactylus marmoratus*, written by Schlegel. Originally the sheet had been marked "*Gonydactylus fasciatus* Nobis[32]— Buitenzorg" with an "o" subsequently inserted above the line after the "y" and the addition "sÿn. *G. marmoratus* K. u. H" and a reference to the relevant illustrations for Boie's "*Erpétologie de Java*" ("Erpét., pl 9, f. 3. 4.").

In his undated handwritten notes Schlegel attributes *Gymnodactylus marmoratus* to Bibron, but remarks at the end that Kuhl had detected this species "rarement a Buitenzorg, mais en abondance sur les hauteurs montagneux ou Fjiliunjavon" (NNM001001387_003; rarely in Buitenzorg, but in abundance on the mountainous heights of Fjiliunjavon) which we read almost verbatim in Kuhl's notes (see above). However, it would be Gray (1831:51) who published sufficient description to validate the name nomenclaturally, but again attributing the name to Kuhl's manuscripts ("Marbled Cyrtodactyle. Marmoratus Gonyodactylus, Kuhl. MSS"), which he had seen during a visit to Leiden (Mecke et al. 2016).[33]

Additional to the one specimen of *Gonyodactylus marmoratus* in Schlegel's list of April 1826 (NNM001001048_001), Müller mentions in his "Catalogus" shipment-list of 1831 (NNM001001436_003) a specimen of "*Gonÿodactÿlus Boiei* Müll.", while he registered in his undated "Catalog" of reptiles from New Guinea (NNM001001423) two specimens of "*Gonÿodactylus Boiei* Müll." besides four specimens of "*G. granosus* [sic!] Müll.", a species that does not turn up either in Müller's notes nor in other documents. Today's denomination of this species remains a mystery.[34]

The nomenclatural complexity continues through the existence of the similarly named *Goniodactylus Boeï* Gray (Gray 1842:58), now known as *Cnemaspis boiei* (Gray 1845). Gray based his description of that species on four specimens collected by Major Hardwicke from India, in the collection of the British Museum in London. No precise locality was provided, and the species has not been subsequently rediscovered (Smith 1935).

Müller's manuscript in transcription and English translation

(Gassó et al. 2020: (NNM001001113_144)

(Baÿ Lobo) August 1828

Gonÿodactÿlus Boiei Müll.

Wama=Kutu beÿ Lobo

Gz. [= Ganze] *Länge des Körpers von der Nasenspitze bis zum After 4″ 9‴* [= 129 mm], *des Schzs.* [= Schwanzes] *5″ 3‴* [= 142 mm]; *Länge des Kopfes von der Nasenspitze bis zum Tÿmpanum 1″ 3‴* [= 34 mm], *Höhe desselben über der Stirn 6 ¾‴* [= 15 mm], *Vorderfüße mit Zehen 1″ 9‴* [= 47 mm], *Hinterfüße mit Zehen 2″ 2 ½‴* [= 60 mm]. *Alle Zehen sind mit kleinen, scharfen Nägeln bewaffnet.*

Whole length of the body from tip of nose to vent 129 mm, length of the tail 142 mm; length of the head from tip of nose to tympanum 34 mm, height of same above forehead 15 mm, forefeet with toes 47 mm, hindfeet with toes 60 mm. All toes armed with small, sharp nails.

Kopf unterschieden [above the line] *groß, dieselbe ovale Form wie beÿ Gony*[odactylus]. *marmoratus Boie. Auch die Hautbedeckung ist im Wesentlichen dieselbe, wie auch die Gestalt des Rüssels u. der kleinen runden Nasenlöchern, über welchen einige kleine Schildchen stehen, viel Ähnlichkeit haben; oben und unten 13–14 Randschilder auf jeder Seite; ein großes Rüssel= u. Lippenschild. —*

Head distinctly large, same oval shape as *Gonyodactylus marmoratus* Boie. Also the skin covering is essentially the same, as also the shape of the snout and the small round nostrils, above which are some small shields, that are very similar.

Above and below 13–14 labial scales on each side; one large large rostral and mental. —

Die Schuppen der obern Theile des Körpers u. des Schzs. [= Schwanzes] *sind außerordentlich fein, rundlich, höckerig, u. auf dem Nacken, Rücken, dern obern Basis* [= above the line] hoch *des Schzs.* [= Schwanzes] *u. der äußeren Fläche der Extremitäten mit doppelt so großen Höckern untermischt. Längs den Seiten, von den vordern zu den hinteren Extremitäten läuft eine Hautfalte auf welcher diese größeren Höcker als in einer Linie stehen u. somit die Grenze vom Unterleibe bilden; die Schuppen der Kehle sind ebenso klein als die des Oberkopfes und ebenfalls durch größere Höcker untermischt; die Schuppen der Brust, des Bauches u. der inneren Seite der Füße sind* [crossed out] *alle gleich große, u. größer als jene des Rückens, dabeÿ rundlich u. ziemlich flach. —*

The scales of the upper parts of the body and the tail are extraordinarily fine, roundish and bumpy, and on the neck, back, the upper base of the tail and the outer surface of the extremities intermixed with double-sized bumps. Along the sides from the front to the rear extremities runs a skin fold on which these larger bumps stand as in a line and thus form the border of the abdomen; the scales of the throat are just as small as those of the upper head and likewise intermixed with larger bumps; the scales of the chest, of the belly and of the inner side of the feet are all of equal size, and larger than those of the back, although roundish and rather flat.

Oberer Theil des Leibes schmutzig grünlich hellgrau mit hin u. wieder [above the line] *rosenröthlichem Anflug. Von dem hinteren Augenwinkel zieht sich* [crossed out] *über* [above the line] *den Nacken eine große schwarze Triangel, u. auf der Mitte des Oberkopfes stehen noch mehrere* [crossed out] *gleichgefärbte Flecken, welche einen nach vorne zu gerichteten Winkel bilden, außer diesen ziehen sich noch über den Rücken u. Schz.* [= Schwanz] *6 bis 7 breite, schwarze Querbinden, die mitunter durch ähnlich gefärbte unregelmäßige Flecken untermischt sind; auch auf der außen Fläche der Extremitäten stehen ähnliche* [= crossed out] *Schattirungen. —*

The upper part of the body is a dirty greenish light grey with an occasional pinkish-reddish tinge. From the rear corner of the eye, a large black triangle extends over the nape of the neck, and on the middle of the upper part of the head there are several spots of the same colour, which form an angle directed towards the front. In addition to these, there are 6 to 7 broad, black transverse bands over the back and tail, which are sometimes intermixed with similarly coloured irregular spots; there are also similar shadings on the outer surfaces of the extremities. —

Whole lower side brownish grey, sometimes with a greenish tinge. —

_145

Ganze untere Seite bräunlichgrau mit bisweilen grünlichem Anstrich. –

A second description is surprising in that it is, quite unusually for Müller, at least partly written in Latin (NNM001001113_138). Basically, the two texts do not show any significant differences; in both, the central features are mentioned—partly with almost the same words, such as "rosenröthlich" (rose-reddish) for the hue in some parts on the back.

Müller's manuscript in transcription and English translation

(Gassó et al. 2020:NNM001001113_138)

Gonÿodactÿlus Boiei

Ziage [indecipherable]*: Capite magno, distincto, naribus parvis, rotundatis,*	With a large, distinct head, small, rounded nostrils,
[Mit großem, markantem Kopf, kleinen, abgerundeten Nasenlöchern]	
+ (über welchen einige kleine Schildchen stehen);	+ (above which there are some small scales);
cauda longiuscula; scuta marginalia 26 in labii superioris et inferioris; squamis supra trunci caudaeque parvis finis, rotundatis, granulatis	long tail; 26 labial shields on the upper and lower lip; the scales above the trunk and tail end small, rounded, granulated
[langer Schwanz; 26 Randschilder an Ober- und Unterlippe; die Schuppen über Rumpf und Schwanz enden klein, abgerundet, gekörnt]	
+ (auf dem Hals, Rücken, der oberen [crossed out] *Basishälfte des Schwanzes und der äußern Seite der Extremitäten mit doppelt so großen Höckern untermischt; Längs den Seiten von den vordern zu den hintern Extremitäten zieht sich eine Hautfalte;*	+ (On the neck, back, the base half of the tail and the outer sides of the extremities intermixed with double-sized bumps; along the sides from the front to the rear extremities there is a fold of skin;
squamis infra corporis parvis subplanis; supra sordide ex virescente glaucus	small scales below the body; above dirty from greenish gray
[kleine Schuppen unter dem Körper; oben schmutzig von grünlich grau]	
+ (mit hin und wieder rosenröthlichem Anflug) collo dorsoque fasciis nigris latis transversis 7, (per maculas irregularites / [_139] *ejusdeae coloris iater mixtis*	+ (with a rose-reddish tinge now and then)
[im Nacken und Rücken mit 7 breiten schwarzen Querstreifen, durch unregelmäßige Flecken von gleicher bereits gemischter Farbe]	neck and back with 7 wide transverse black bands, through irregular spots of the same colour already mixed
(die durch ähnlich gefärbte unregelmäßige Flecken Untermischt sind.	(which are intermixed by similarly coloured irregular spots.
subtus ex brunescente griseus. —	brownish gray underneath. —
[Unterseite bräunlich grau]	

Once again, Schlegel formally named this species without using Müller's manuscript name. In the first part of his "*Abbildungen*" (Schlegel 1837b:10) he noted the existence of a distinct variety of his *Gymnodactylus marmoratus* from New Guinea collected by Macklot (again presumably using Macklot's name as leader of the Commissie, although Müller was undoubtedly the person who studied the material), which was larger and somewhat differently coloured, although without giving any further details. An accompanying plate (Tab. 2, Fig. 1, reproduced here as Fig. 16) in the "Atlas" shows an individual which exactly matches Müller's description. While no name was provided directly in the text or on the plate, the introductory material for the final completed "*Abbildungen*" includes a "Systematische Uebersicht" (systematic overview) for the whole work, and on p. IX the name "*G.* (*Gymnodactylus*) *marmoratus* var. *Novae Guineae*" appears, citing both the text page and the plate. This use of a name with reference to the plate and description is sufficient under the Code of Zoological Nomenclature to validate the name nomenclaturally. Presumably, this taxonomic list of the entire work was published at the completion of the work, so that the name would date from 1844 rather than 1837 when the text of the first decade appeared. Brongersma (1934) redescribed the species, including notes on the two syntypes in the Naturalis collection, both registered as RMNH 2702. Both specimens are male. In a final nomenclatural twist, Brongersma's paper was preceded by a previous description (Brongersma 1928) of a different species as *Gymnodactylus novae-guineae*. That species was renamed as *Cyrtodactylus papuensis* by Brongersma (1934).

After these gecko species assigned to Boie, various other reptile species follow in Müller's notes, such as *Lÿcodon nuchalis* Müll., post quem corrected to "modertus", with the place "Amboina" and the obviously erroneous date "August 1828", since the commissary had already left Amboina on 21 April 1828 (Jacobs and Shea 2021:49) and did not reach it again on its return voyage until 5 September.

Conclusion

After little more than eight weeks on New Guinea, the Commissie set off again at the end of August 1828. Via Ambon, the members of the Commissie sailed to Koepang, today's Kupang, on Timor, where the scientists left the *Triton* and returned partly overland to Buitenzorg. Their arrival on 11 December 1829 was followed by explorations in West Java until June 1833. The Sumatra expedition followed from June 1833 to January 1834 and the Borneo expedition from July 1836 to January 1837, both under the sole leadership of Salomon Müller (Jacobs 2022). The return journey from Batavia, today's Jakarta, began on 12 April; Hellevoetsluis (off Rotterdam) was reached on 21 August 1837 (see Jacobs and Shea 2022:49). However, it should not be forgotten that Kuhl, Keultjes and van Hasselt, three of the four members of the first expedition's commission, and Boie, Zippelius, van Raalten, Macklot, van Oort and later Horner, six of the second, died.

New Guinea was therefore by no means the focus of the entire undertaking. Nevertheless, it must be said that the research results were extraordinary. The sheer numbers of animals collected undoubtedly document that the main focus was on Borneo, Sumatra, Timor and, above all, Java itself: a list with the number of collected animals by Salomon Müller classified according to the main collecting areas Borneo, Sumatra, Buitenzorg/Java, New Guinea and Timor indicates that of a total of more than 31,000 specimens, only 409 were collected in New Guinea (NNM001001453_001). Other estimates, although a precise overview is lacking, assume more than 100,000 specimens (van Wingerden 2023:75). Despite the rather low numbers for New Guinea in comparison to the other islands, the scientific results for this short period were remarkable. Müller alone described, albeit unpublished, at least 16 species which he considered completely unknown. We cannot legitimately speculate whether Macklot's notes which were lost in a fire in 1832 would have added even more.

Müller's handwritten, never published opus, presented in the online-archive of Naturalis, published as facsimiles by Brill (Leiden), as NNM001001113 (Gassó et al. 2020), dealing with reptiles and amphibians exclusively, covers mainly the period from March 1827 to August 1828. We cannot offer more than a short excerpt in this article, omitting Amphibia like *Hÿlaplesia cornuta* Müll., *Bombinator oxÿcephalus* Müll., *Ceratophrÿs turpicula* Müll., *Rana poicilia* Müll., *Hÿla sinuosa* Müll. and *Hÿla impedita* Müll. and many reports on species Müller collected but recognized as already described by others. This all definitely deserves a thorough scientific treatment and publication.

As every selection always remains contestable, the one presented here can only offer a glimpse on the rich harvest reaped by the Natuurkundige Commissie. The basis for this limited analysis was mainly the already mentioned online-archive which deserves highest praise even if a thorough methodological introduction is missing, and—unavoidable in the light of the given complexity—mistakes occurred and possibly not all documents were discovered and included.

Even a superficial comparison between the shipment-lists and Müller's notes implies that not all of Müller's records were detected under the assumption that Müller indeed covered all species he and his colleagues had found. A thorough research study with the aim of a general presentation of the Commissie's achievement including the collection in Naturalis of today would be more than welcome. Nevertheless, this digital publication deserves the highest praise as it allows direct access worldwide. Together with Temminck's three-volume testimony of the Commissie's achievements, it constitutes the basis for an evaluation of the scientific results collected in twelve years in the East Indies.

Since most of these texts are only available in Dutch or online in manuscript form, which is hardly legible even for

the trained eye, reception of these findings has taken place with a rather limited scope at best. Nearly two hundred years after they were composed, we present selected texts here with a historical scientific contextualisation and commentary.

Together with the first part of this essay our primary intention was not to present a definitive analysis, but to open the door to a largely unexploited treasure, which undoubtedly makes further intensive study seem more than worthwhile.

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Notes

1. Temminck's record of the achievements of the Commissie was meant as a certificate of performance. It was published in 29 instalments from 1839 to 1847 (Husson and Holthuis 1955), although the volumes bear the nominal years 1839–1844, and ultimately comprised three volumes: "*Zoologie*" with the preface to the entire work; "*Land- en Volkenkunde*"; and "*Botanie*" edited by P. W. Korthals.

   Originally 26 parts were planned for the three volumes of the work, although 29 parts were ultimately sent to subscribers, culminating with the title page of the respective volume. The completed volumes are not officially numbered, although the "*Zoologie*" volume begins with the editors' preface, dated 12 December 1839, and seems to have been the first of the three volumes to be completed. We follow Husson and Holthuis (1955) for the dating of the individual parts of Temminck's account, since the dates given on the title pages are not reliable. The page numbers given in the references to this volume are preceded by an indication of the corresponding part, since "*Zoologie*" consists of 6 individually paginated sections that do not correspond with the 12 sequential issued parts.
2. Jacobs and Shea (2022) listed an additional species, *Platydactylus monarchis*, in error. This gecko would become *Gekko monarchus* (Duméril & Bibron 1836) and was collected in Ambon.
3. While the text itself must be considered largely lost (although Hoogmoed (1980, 1982) reported the existence of some sections), some illustrations remain in Leiden and are currently being prepared for publication by the Society for the Study of Amphibians and Reptiles. At the beginning of the collection of 57 illustrations, some of which are missing, is a list "Designation des Planches pour le Graveur", which suggests that at least this part was ready for typesetting, and some actually exist with proper captions as print proofs. Nevertheless, as we know from a letter of 23 June 1826 to Joannes Andreas Susanna (NNM001001201), the "administrateur" of the Rijksmuseum Leiden (together with its director Temminck, the most important partner in correspondence), Boie continued to suggest substitute illustrations while in the field. Evidently, he deemed recently drawn illustrations by van Oort more suitable and considered nuanced taxonomic distinctions appropriate in certain cases.

   Since the drawings for Boie's *Erpétologie de Java* belong to the public domain of the Naturalis collection, we discuss some of their captions which are essential to interpreting Müller's manuscripts.
4. Schlegel's "*Essai*" was published as two independently paginated parts, apparently simultaneously. Hence, the part must be indicated in association with page number.
5. Schlegel (1826, 1827) was horrified at the uncredited use of some of Boie's names in works by Kaup and Fitzinger, and published two summaries of the classification from Boie's now-lost manuscript to place Boie's named genera and species on public record. Additionally, Heinrich's brother Friedrich published two classifications of snakes (F. Boie 1826, 1827), the second of which was intended as a critique and expansion, in light of subsequent papers, of the snake classification proposed by Merrem (1820). Friedrich's (1827) classification incorporated, with attribution, some of his brother's named species, sometimes with sufficient quotation of the Latin text from Heinrich's monograph to validate the names.

   Article 12.2.5 of the *International Code of Zoological Nomenclature* allows for new generic names prior to 1931 to be considered available if they were published in combination with one or more previously available species names, without any need for a diagnosis or description. Hence, the listings of Schlegel (1826, 1827), F. Boie (1826) and Fitzinger (1826) can, in many cases, be considered to have validly published Boie's generic names, and it is therefore important to determine their relative dates of publication, with all four papers often having been considered to be published in 1826 (e.g., Wallach et al. 2014). The preface to Fitzinger's monograph is dated 4 June 1826, and Adler (1997) suggested a publication date around June or July, based on receipt of the book by the editor of *Isis von Oken* being reported in issue 9 of that journal for 1826, which Adler assumed to have been published in August because the issue contained a letter dated 29 July. However, *Isis* often published letters dated two or more months prior to the expected release of the issues (the following issue, for example, includes a letter dated 21 May). *Isis* was issued as monthly issues, with 12 issues per year. While no specific dates of release are noted on the issues, it must be assumed that the issues came out within a calendar year. Issue 1 for 1826 includes mention of receipt of a journal dated December 1825, and a book dated 1826, agreeing with the interpretation that the first issue for 1826 was the January issue. This would make issue 9 the September issue, so that the publication of Fitzinger (1826) can only be restricted to the period between June and August. The paper by F. Boie (1826) was published in issue 10 of *Isis*, giving it a date of publication of October 1826. Schlegel (1827) was published in issue 3 of the same journal in 1827. Although the first three issues of the journal for 1827 have a printer's mark with the year 1826 noted on them, issue 2 also includes notification of receipt of a book published in 1827, suggesting that the 1826 dates on these three issues was an error. Further, for these three issues to have appeared at the end of 1826 would have resulted in 15 issues being released in 1826, unlikely for a monthly journal.

This leaves just Schlegel (1826) to date. This paper was published in the *Bulletin des Sciences Naturelles et de Géologie*, which was also a monthly journal, with three volumes of four issues released in 1826. While these, like *Isis*, lacked explicit dates of publication on the issues, errata noted in subsequent issues give the second issue of Volume 9 (the third for the year 1826), containing Schlegel's paper, as being the October issue. Confirming that it antedated Schlegel (1827) is the commentary in Schlegel (1826:234) that his paper in *Isis* was to appear shortly ("Les principes et le ton qui règnent dans cet ouvrage m'engagent à donner à son sujet quelques observations critiques qui paraîtront sous peu dans l'Isis"; The principles and tone which reign in this work compel me to give some critical observations on its subject which will appear shortly in *Isis*).

Unfortunately, with both F. Boie (1826) and Schlegel (1826) appearing in October issues of unrelated journals, we are unable to identify the precise order of appearance of these two papers as yet.

6. The spelling and punctuation in our transcriptions correspond directly to the original. Thus, Müller's peculiarities are meticulously retained: "ÿ" instead of "y", the frequent omission of the German umlaut, for example, in the abbreviation of his own name "Mull." as well as his preference of the colon in abbreviations instead of the period, like "P: v. Oort".

   Usages of the time, such as indicating a double letter by an overline, are also retained, although Müller does not handle this consistently—see "Psamophis" v. "Psammophis".
7. At the time—until the decimal system introduced by Napoleon—French measurements were in use: foot (in French: pied), inch (pouce) and line (ligne), which were indicated with one, two and three apostrophes (i.e., 1 pied = 32.5 cm; 1 pouce = 2.71 cm; 1 ligne = 2.26 mm) (Jacobs and Koch 2021).
8. As was apparently the case with the skinks (Jacobs and Shea 2022), Müller seems to have adopted a nomenclature for the head shields of snakes defined and illustrated by Merrem (1820), and we adopt the modern names for these scales in translating them from the original text.
9. The abbreviation in the heading of this note could not be clarified. It looks like an elongated "y" but is certainly not meant as a letter. It is possibly a personal abbreviation of Müller, which is also used in his notes on *Hemidactÿlus baliatus* Müll.
10. Page changes in the original are indicated—such as here—by "_070".
11. Müller's *Dendrophis* species cannot be unequivocally linked to Gmelin's *Coluber pictus* (today: *Dendrelaphis pictus*), the only *Dendrelaphis* species name available at the time of the expedition, which does not occur on New Guinea. Gmelin's brief Latin description is not very detailed: "Coluber dorso caeruleo, lateribus linea atra in albidum delinente pictus. Rostrum *acutum*." (Gmelin 1789:1116; Coluber with a bluish back, a black line on the sides with a white outline delineates pictus. Snout pointed).

    Boie also refers to Gmelin but speaks of a "ex olivaceo fusca, splendore aeneo refulgens" (F. Boie 1827:530; from olive-brown, shining with a bronze lustre) instead of a bluish colour—possibly because of the ethanol.
12. These must have been additional to the specimens Heinrich Boie used to describe as *D. pictus* in his manuscript "*Erpétologie de Java*", which was completed before 1826. Boie apparently used specimens from Java that were already "In vielen Sammlungen" (F. Boie 1827:530; in many collections).
13. It is difficult to fully reconcile these shipping records with the current holdings of *Dendrelaphis* specimens in the Naturalis collection, with their online catalogue (https://bioportal.naturalis.nl/) recording the following specimens collected by Müller:
    - *Dendrelaphis inornatus* Boulenger 1897 (5 specimens, Müller, Samao)
    - *Dendrelaphis inornatus* Boulenger 1897 (5 specimens, Müller and Macklot, Samao)
    - *Dendrelaphis pictus* (Gmelin 1789) (4 specimens, Müller, Borneo)
    - *Dendrelaphis formosus* (Boie 1827) (1 specimen, Müller, Padang).
    - *Dendrelaphis caudolineatus* (Gray 1834a) (1 specimen, Müller and van Oort, Padang).

    The Sumatran (Padang) and Bornean specimens must have been collected following the return of the Commissie from their New Guinea sojourn.
14. *Dendrophis* (meaning "tree snake") was another generic name originally created by Heinrich Boie in his "*Erpétologie de Java*". Heinrich's diagnosis was published by Friedrich Boie (1827), and his original concept of the genus included six species (Schlegel 1826, 1827). The concept used by Friedrich included eight species. However, Heinrich's creation of the genus was pre-empted by Fitzinger's (1826:29–30) use of Boie's generic name in a key and listing of only one of the species intended to be placed in the genus by Heinrich, *Coluber ahaetulla* Linnaeus 1758. While *Dendrophis* was used for many years for Asian bronzeback tree snakes, Fitzinger's use of Linneaus' *ahaetulla*, which represents a South American species, as the type species resulted in *Dendrophis* becoming a junior synonym of *Leptophis*, and so the name *Dendrelaphis* Boulenger 1890 came into use for the Asian bronzeback tree snakes.
15. Boie's descriptions are highly structured, with high emphasis placed on eye size, the first character in each description: "Oculis mediocribus" for *D. dendrophila* and *D. multomaculata*, "Oculis magnis" for *D. cynodon* but for *D. drapiezii* "Oculis maximis" (Boie 1827: 549; medium-sized eyes; big eyes; largest eyes). His description of *drapiezii* also noted "scuto loreo nullo" (no loreal scale) and scale counts of "159 + 137". The ventral scale count is clearly wrong, possibly a mistake for 259 by Friedrich in copying across the information (Hoogmoed (1982) noted other transcription errors in Friedrich's work).
16. As noted by Schlegel (1837a part 2:270), Boie's description of *drapiezii*, which was presumably named after the Belgian naturalist Pierre Auguste Joseph Drapiez (1778–1856), was based on a specimen in the Natural History Museum in Brussels. Boie not only described the species in his unpublished "*Erpétologie de Java*" but provided an illustration on plate 38 as well.
17. These notes appear to be the preparatory materials for the accounts of the genus in his "*Essai*". Strangely, the scale counts differ somewhat between these two sources ("*Essai*" in parentheses): *D. irregularis*—236 + 93, 262 + 116 [barely readable] (250 + 100); *D. Drapiezii*—259 + 114, 264 + 154 (260 + 130); *D. Cynodon*—272 + 156, 248 + 142 (260 + 140). In his "*Abbildungen*" he claims for *D. Drapiezii*: "Bauchschilder finden sich gewöhnlich 260; aber die Schwanzschilder variiren an der Zahl von 114 bis 154" (Schlegel 1839a:49; Ventral shields are usually 260; but the caudal shields vary in number from 114 to 154). Obviously from the increased number of counts provided for some species, Schlegel had had the opportunity to study further speci-

mens in between compiling his manuscript and the published "*Essai*". Even more curiously, the scale count provided by Müller for his Lobo Bay specimen, 267 + 102 (NNM001001423_001) does not match the counts Schlegel provides for either *drapiezii* or *irregularis*.

18. In the "*Verhandelingen*" (Temminck 1839–1844 [–47]), *Tropidonotus* is only mentioned in passing, without any taxonomic description, and it is not covered at all in Schlegel's "*Abbildungen*".
19. These annotations include, added to the description of a species to which no name is given by Kuhl (_218), the name *Tropidonotus rhodomelas*, referencing plate 26 of the "*Erpétologie de Java*". Curiously, Schlegel (1826, 1827) allocated that name to Kuhl and van Hasselt, although they did not name the taxon in these manuscript notes, while Friedrich Boie (1827) attributed it to Heinrich, providing the Latin description written by Heinrich to validate the name. Possibly Schlegel was recognising Kuhl and van Hasselt's primacy in providing the description of the taxon despite not creating the name, later coined by Boie.

    A second species, *Tropinotus subminiatus*, which Kuhl and van Hasselt had claimed for themselves by adding "Nobis" in these notes (_212), also appears in Schlegel (1826, 1827) and F. Boie (1827), as well as in Schlegel's "*Essai*", all attributing the name to Reinw[ardt].
20. Although the volume bears the publication year of 1817, it was published in 1816 (Roux 1976).
21. That a term describing a snake diving from a tree like a javelin should be connected with a wriggling burrowing snake-like lizard is amusing but may simply reflect a desire by many early herpetologists to use any Greek or Latin word for snake to create a generic name for a snake-like reptile, without considering the original application of that name in the classical language.
22. Oppel's formal recognition of these as a distinct genus followed an earlier informal recognition of the vernacular "Typhlopes" by Schneider (1801:339)
23. Schlegel's "*Abbildungen*" were initially published in 1837–44 in so-called decades, i.e. 10 plates each with the corresponding text. The dating of the release of these decades of plates was explored by Jacobs and Koch (2021:71). However, they did not define which pages of text were released in association with the plates. As the text describing *Typhlops polygrammicus* was in a different part of the volume (p. 40) to the order of the plate of that species (plate 32), we need to further consider the release of the text. Examination of the printer's marks at the foot of the first page of each signature provides evidence that the text signatures, while commencing as exact matches for the first few decades, did not exactly follow the plates to which they related in the later releases. Signatures 1 and 2, both of 16 pages (pp. 1–32), relate to Decade 1 completely, while signatures 3 and 4, again of 16 pages each, correspond to Decade 2 (pp. 33–64) completely. Decade 3, however, changes the pattern, with signatures 5 and 6 (16 pages each) along with signature 7 (8 pages), bringing the text to p. 104, not quite exactly providing corresponding text to plates 21–30, which cover species up to p. 108. Decade 4 should cover pages up to p. 126, but corresponds to signature 8 (16 pp.) and 9 (4 pp) with the last being p. 124, again a few pages short. Decade 5 corresponds to signature 10 (16 pp., 125–140), plus an unnumbered 11th signature of 16 pp, which equates to the 14 pages of introductory material (i–xiv), plus the last page of text and the reverse of that page.

    For the case of *Typhlops polygrammicus*, this means that the text description appeared as part of Decade 2 (1839a) while the illustration on plate 32 appeared as part of Decade 4 (1840).
24. This adjective also provided the common name of the taxonomic group caecilians, going back to Carl von Linné, the group to which Seba's illustration and description belong. Linnaeus (1758) described the first species, *Caecilia tentaculata*.
25. Curiously, the description of *Dibamus novaeguineae* uses what seems to be an unusual comparison in describing the width of the species: "sa grosseur est celle d'un tuyau de plume ordinaire" (Duméril and Bibron 1839:834; its size is that of an ordinary feather). A strangely similar comparison was used by Friedrich Boie for *Acontias coecus*: "von der Dicke einer Rabenfeder," (Boie 1827:511; of the thickness of a raven's feather). At least one even older reference also uses the thickness of a bird feather as reference to a reptile body: Schneider (1801:291), in redescribing the snake *Elaps lemniscatus* (Linnaeus), states "truncus pennae cygneae crassitie" (trunk of the thickness of a swan quill). Such comparisons are likely to have left the subsequent herpetological literature with the replacement of bird feathers as pens by more modern writing tools.
26. While Gerrit van Raalten, the last survivor of the First Commissie, also participated in the Second Commissie as an artist, he had started with the First Commissie as taxidermist, and only took on duties as an artist following the death of the first artist Gerrit Laurens Keultjes. He had no formal training as an artist. Most of the reptile paintings from the Second Commissie are signed by van Oort, and the few that aren't are of similar style to those that are signed. Among the herpetological artwork, only that of one of the frogs, *Hyla sinuosa*, is signed by van Raalten (Jacobs and Shea 2022:50). Hence, we presume, in the absence of clear evidence to the contrary that van Raalten painted reptiles, that the unascribed reptile paintings are the work of van Oort.
27. The generic name *Calotes* was first created by Cuvier (1816:35), who also used the colloquial form Galéotes, and stated, quoting Pliny, that "le stellion (des latins) était nommé par les grecs galeotes, colotes et askalabotes" (the stellion (from the Latins) was named by the Greeks galeotes, colotes and askalabotes), with the choice of galeotes and calotes being arbitrary. Schlegel (1827:column 290), in summarising the classification from Boie's "*Erpétologie de Java*", used Galeotes, noting specifically that "Γαλεώτης bezeichnete bey den Griechen eine Eidechsenart und ist männlich. Καλότης indessen die Schönheit, und ist weiblich. Wir behalten das Erstere, in die französische Sprache ebenfalls übergenommen, bey" (The Greeks called Galeotes a type of lizard and is male. Calotes, however, is the beauty, and is female. We keep the former, also adopted by the French language). Schlegel does not make it clear whether this interpretation is his alone, or whether it was followed by Boie. The use of *Calotes* by Müller suggests that Boie had used *Calotes*.
28. Curiously, the very next drawing in the online-archive following *Calotes megapogon* is assigned by archive staff to *Gonocephalus chamaeleontinus* (NNM001000691*)*, and is described by an unidentifiable author in pencil as "Gal[eotes]. Lophyre ad Java" and allotted to the draughtsman "v Oord". The misspelling of the artist's name and the imprecise species indication are surprising, and suggest the annotations were not by either Müller or Schlegel.
29. In Kuhl's description, the nuchal crest is "nuchali parvissima, humillissima diversa" (Kuhl 1820:108, the nuchal crest is very small, very low, and diverse). The description refers to both Seba (1734, Vol. I, pl. 89.1) and specimens in the Paris Museum.
30. Maurevert was an artist who accompanied Alfred Duvaucel and Pierre-Médard Diard to India, and later followed Diard to Java about 1820. He later started working as an artist for the First

Commissie after the death of the original artist, Gerrit Keultjes, in September 1821 (Roberts 1993).

31. What Müller calls "Schenkelöffnungen" (thigh openings) is more correctly rendered by de Rooij in her redescription of *G. baliola* as "femoral pores in an angular series" of which she counts, probably on one side, "18" while Müller comes up with "34–38", presumably summing both sides. Like Müller's "deprimirt, scharfkantig" (depressed sharp-edged), she also refers to the shape of the tail as "depressed, with a sharp lateral edge" (de Rooij 1915:43).
32. The species name *fasciatus*, which also appears in Kuhl's manuscript notes (above), appears not to have been formally published, but was replaced by *marmoratus*.
33. The lectotype (RMNH RENA.2710a.1) and paralectotypes (RMNH RENA.2710, 2710a, the two registration numbers covering a total of 14 specimens; Mecke et al. 2016) of *Cyrtodactylus marmoratus* Gray 1831 collected by Kuhl and van Hasselt, are kept in Naturalis (Leiden) under the name *Cyrtodactylus marmoratus* (Kuhl 1820). An additional two specimens sent to Paris by Schlegel were also considered part of the type series by Brygoo (1990), although Mecke et al. (2016) did not accept their type status, due to an inability to clearly link the specimens to Kuhl rather than members of the Second Commissie.
34. The similar-sounding name *Hemidactylus granosus* (Heyden 1827) is suggestive as a source, but this species only occurs in Egypt (Sinai Peninsula). For the moment it cannot be clarified what species Müller intended with his name *granosus*.

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